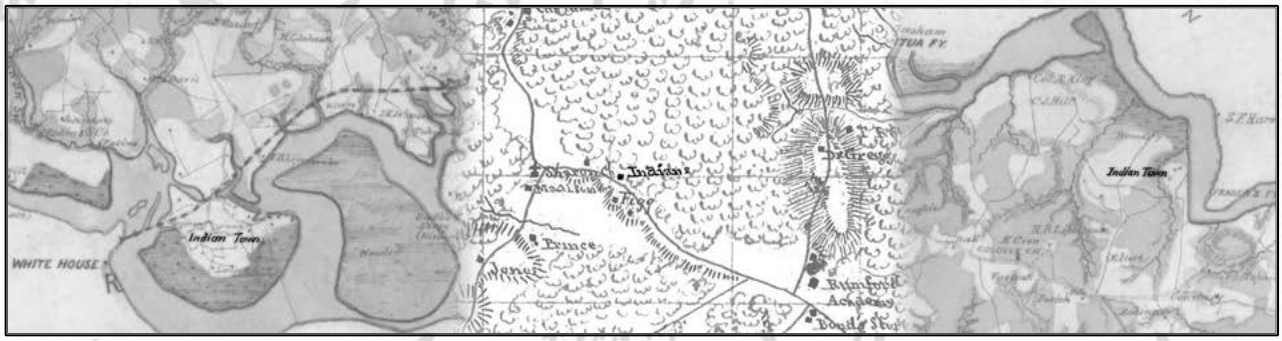
Defining the Greater York River Indigenous Cultural Landscape



Prepared By:
Scott M. Strickland
Julia A. King
Martha McCartney

With Contributions From:
The Pamunkey Indian Tribe
The Upper Mattaponi Tribe

Prepared For:
National Park Service
Captain John Smith Chesapeake National Historic Trail
Chesapeake Conservancy

The Pamunkey Indian Tribe
Pamunkey Reservation, King William, Virginia

The Upper Mattaponi Tribe
Adamstown, King William, Virginia

The Mattaponi Indian Tribe
Mattaponi Reservation, King William, Virginia

St. Mary's College of Maryland
St. Mary's City, Maryland

November 2019

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Prepared for:

The National Park Service Chesapeake Bay & Colonial National Historical Park
The Chesapeake Conservancy
Annapolis, Maryland

The Pamunkey Indian Tribe
Pamunkey Reservation, King William, Virginia

The Upper Mattaponi Indian Tribe
Adamstown, King William, Virginia

The Mattaponi Indian Tribe
Mattaponi Reservation, King William, Virginia

St. Mary's College of Maryland
St. Mary's City, Maryland

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EXECUTIVE SUMMARY

As part of its management of the Captain John Smith Chesapeake National Historic Trail, the National Park Service (NPS) commissioned this project in an effort to identify and represent the York River Indigenous Cultural Landscape. The work was undertaken by St. Mary's College of Maryland in close coordination with NPS. The Indigenous Cultural Landscape (ICL) concept represents "the context of the American Indian peoples in the Chesapeake Bay and their interaction with the landscape." Identifying ICLs is important for raising public awareness about the many tribal communities that have lived in the Chesapeake Bay region for thousands of years and continue to live in their ancestral homeland. ICLs are also important for land conservation, public access to, and preservation of the Chesapeake Bay.

The state- and Federally-recognized Pamunkey and Upper Mattaponi tribes and the state-recognized Mattaponi tribe, who are today centered in their ancestral homeland in the Pamunkey and Mattaponi river watersheds, were engaged as part of this project. The Pamunkey and Upper Mattaponi tribes participated in meetings and driving tours. The Mattaponi tribe was also at the time involved in a project focused on identifying their historic resources, leaving time for participating in only one.

Project methodology included the completion of historical background research; driving tours, face-to-face meetings, and interviews; and the collection of large data sets including environmental, archaeological, and land use data. Geographical Information Systems (GIS) technology was used to identify relationships between all these data forms to model the historical and contemporary Native landscape. These data sets are curated by the National Park Service, the Chesapeake Conservancy, and St. Mary's College of Maryland.

The three tribal communities are today located in distinct but neighboring and sometimes overlapping spaces in the Pamunkey and Mattaponi river watersheds. For each tribe, the contemporary everyday landscape is relatively localized to those spaces. The Pamunkey also include diasporic communities located in Richmond, Virginia and in Philadelphia, Pennsylvania. For the Upper Mattaponi and the Mattaponi, many tribal members work in and are therefore tied to Richmond, Virginia.

The analysis of the various data sets reveals both continuity and change in terms of Native use, stewardship, and meaning of the landscape. Settlements or towns occupied between 1200 and 1610 CE were often sited along waterways in areas where good, well-drained soils were located in close proximity to marshlands and natural landings. The farming, hunting, and foraging practices supported by this environment persisted through the eighteenth, nineteenth, and twentieth centuries even as the three tribes became active participants in the market economy.

While all three tribes recognize the significance of Werowocomoco, Powhatan's principal town at the time of English invasion, and all three tribes are actively involved in the National Park Service's efforts to preserve and interpret the site, Werowocomoco is not part of the three tribes' everyday landscape. The reasons for this could be Werowocomoco's early abandonment (by 1610 CE) in the face of an unleashing invasion of their homeland. Werowocomoco is also in the lower York valley while the three tribes are and have historically been located along the narrower Pamunkey and Mattaponi rivers (above the York).

Following a discussion of the York River ICL as represented by tribal members and through spatial analysis, ten recommendations are presented. These include:

- Connect modern-day Native communities to the eighteenth- and nineteenth-century landscapes.

- Continue the collection of oral history interviews with tribal members to document changing landscapes.
- Nomination of properties to the National Register of Historic Places.
- Build spatial datasets for future planning/documentation of tribal histories.
- Develop educational materials for non-tribal members.
- Gap analysis of key parcels.
- Documentation of urban ICLs.
- Expand the focus to other watersheds.
- Contact archaeological survey elsewhere in the Pamunkey and Mattaponi river valleys.
- Acknowledge the government-to-government relationship for Federally-recognized tribes.

ACKNOWLEDGMENTS

A number of individuals and organizations contributed to the success of this project. The first acknowledgment must go to the three tribes, including the Pamunkey, Upper Mattaponi, and Mattaponi, who have made this part of Virginia their home for thousands of years.

For the Pamunkey, we are grateful to Lauren Fox, Chief Robert Gray, Allyson Gray, and Ashley Atkins Spivey for their interest, enthusiasm, and assistance with organizing meetings and driving tours. Our thanks also go to former Chief Warren Cook, Layne Cook, John Henry Langston, and Grover Miles for spending time with us, sharing their stories and insights, and reviewing our findings.

For the Upper Mattaponi, we are grateful to Chief Frank Adams for welcoming us to the tribe and for his interest, enthusiasm, and assistance with meeting and driving tour organization. We are also grateful to former Chief Ken Adams, Tommy Tuppence, Jimmy Adams, Jean Adams, Melvin Adams, Jr., Joan Faulkner, Jay Gillespie, William Hicks, Amanda McKinney, and Brenda McKinney. We will always remember our exciting "off-road" experience in a college van!

For the Mattaponi, we are grateful to Chief Mark Custalow for taking the time to meet with us and share his stories about the Mattaponi shad hatchery.

The driving tours organized as part of this project happened because of the generosity of the many landowners who welcomed us to their properties. Mr. James Woolford, who owns Cownes, Mr. William Tyler, who owns Island Farm, and Mrs. Nancy Ball Sharp, who owns the Sam Ball Farm, understood our goals and project purpose and allowed us access their farms. We appreciate their kindnesses in hosting our group.

This project would not have happened without the foresight of the National Park Service (NPS), which has long recognized the importance of telling the history of America from a Native point of view. We are grateful to both NPS's Chesapeake Bay Office and Colonial National Historical Park. We thank Colonial National Historical Park Superintendent Kym Hall for her strong support of this effort. We are especially grateful to Cindy Chance and Carolyn Black for their assistance, participation, and guidance with the project.

The Chesapeake Conservancy provided the administrative oversight for the project. We thank Joel Dunn, Jacob Leizear, Joseph McCauley, and Susan Shingledecker, and former employee Colleen Whitlock, all of whom assisted with the management of the project. We especially appreciate Joe's participation in several meetings with the tribes.

Non-tribal stakeholders were extremely helpful with understanding the greater landscape of which the tribes are a part and how that landscape has been used, is used, and may be used in the future. Organizations represented in this project include the Fairfield Foundation, King William County Planning and Zoning, the King William Historical Society, the Naval Weapons Station-Yorktown, the Virginia Department of Conservation and Recreation, the Virginia Department of Forestry, the York County Historical Museum, and York County Planning and Zoning.

We are also grateful to Joe B. Jones and Dr. Christopher Shephard of the William and Mary Center for Archaeological Research for sharing information with us about their work in the York River valley and their plans for survey on the Pamunkey Reservation.

At. St. Mary's College of Maryland, Sabine Dillingham, Adam Malisch, Irene Olnick, Morgan Smith, and Lori Marks shepherded the project from start to finish, ensuring our administrative responsibilities were met.

We have endeavored to produce a report that will be useful to the National Park Service. We are also hopeful that the report is just as useful to the members of the Pamunkey, Upper Mattaponi, and Mattaponi tribes. We again thank the National Park Service and the tribes for their trust in our work.

Scott M. Strickland
Julia A. King
St. Mary's City, Maryland

Martha McCartney
Williamsburg, Virginia

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CHAPTER I
INTRODUCTION

The Pamunkey, Mattaponi, and Upper Mattaponi Indian tribes are three of eleven state-recognized tribes in the Commonwealth of Virginia. Additionally, the Pamunkey and Upper Mattaponi are two of seven Federally-recognized tribes in the state. All three tribes are the traditionally associated nations of the greater York River drainage, including the Pamunkey and Mattaponi rivers of Virginia. The members of all three tribes are descendants of the Native people who met with and engaged Captain John Smith during his explorations of Chesapeake Bay in 1608. Smith encountered at least 39 Native settlements in the York, Pamunkey, and Mattaponi river watersheds, finding the densest settlements located on the peninsula between the Pamunkey and Mattaponi rivers, where the three tribes are located today (Figure 1). Werowocomoco, the seat of power of the Powhatan polity, was located along the north bank of the York River at what is now Purtan Bay. After Smith's visit and with the arrival of English encroachment and occupation, the various tribes of the York River drainage were forced to develop strategies of survival as they adapted to English occupation in their ancestral homeland.

The purpose of this project is to identify and represent the York River Indigenous Cultural Landscape (ICL) in the past and in the present. This project was undertaken as an initiative of the National Park Service's Chesapeake Bay Office, the unit which supported and managed the Captain John Smith Chesapeake National Historic Trail. Since June 1, 2018, the trail is supported and managed by Colonial National Historical Park. The Chesapeake Trail, as it is called in shorthand, was established by Congress in 2006 to commemorate the then-upcoming 400th anniversary of Smith's exploration of the Chesapeake Bay (1607-1609). Given that the York River drainage was the nexus of the Powhatan chiefdom, indigenous perspectives of landscape are especially important to the National Park Service, which acquired the Werowocomoco site, the Powhatan capital, in 2016. Identifying, mapping, and representing that landscape is critical to the modern-day interpretation of the Chesapeake Trail.

The Captain John Smith Chesapeake National Historic Trail Comprehensive Management Plan (CMP) identifies three key areas of applicability for the ICL concept: land conservation, public access, and preservation of the Chesapeake Bay (National Park Service [NPS] 2011). The CMP's ICL model is a tool for public engagement, particularly with regard to educational benefits. Those benefits include learning about descendant indigenous communities and the relationships of these communities with landscapes, past and present.

The ICL concept is also intended as a tool for contemporary indigenous communities, serving to engage the broader community by documenting and introducing Native interests to those of land planners and conservationists. The ICL concept "recognizes that these indigenous communities still exist and that respecting them and their cultures is a valid and central goal of any land/water conservation effort." Most importantly, the CMP notes that descendant Native groups should participate in selecting and prioritizing culturally significant landscapes (NPS 2011: Appendix Q1-Q2). This study uses these principles, in this case, to document the historic and contemporary landscape associated with the York River groups.

As Smith sailed up the Bay and into its tributaries, he encountered hundreds of hamlets, towns, and territories populated by nations whose histories extended back centuries and even millennia. Smith's visit looms large in the modern national consciousness because of the extraordinary map and report he created trying to make sense of the Native cultures and polities he saw, all part of an effort to send information about the promise of colonization in this region back to investors in England. Despite Smith's biases and incomplete understandings of what he and his crew observed, his map and report are considered foundation-

P
O
W
H
A
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Powhatan
Werowocomoco
James-towne
Smith
Appamatuck
Arrohateck
Orapaks
Cattachiptico
Passaunkack
Myahtuckpassu
Utcustank
Accoqueck
Secobeck
Martoughquaunk
Anaskenoans
Muttamussinsack
Nandtanghtacund
Anrenapeugh
Papiscone
Kerahocak
Pissaseck
Nawacaten
Mangoraca
Wecuppem
Matchepick
Matchutt
Cinquoteck
Mamanasy
Pasaughtacock
Poruptanck
Mattacock
Mattapament
Mattapanient flu
Pamunkey flu
Pamunkey
Chickahamania flu
Youghtanund flu
Kiskiack
Camaunkack
Capahowasick
Indals poynt
Wiffins poynt
Poynt Warde
Cekakawwon
Cittatanomen
Wighcocomoco
Cinquack
Paranka-tank
Opisco-rank
Tepahanock
Tepahanock flu
Pamunkey flu
Pamaunkey flu
Ceader Ile
Geosnolds haue
Kecoughtan
Chawopo
Quirenahecomoco
Nantaporac
Mastapament
Ozenick
Werawahoc
Matchuc
Menapucunt
Vttamussak
Kupkipcock
Isakep
Acconoc
Potauca
Accossiuwinck
Attamtuck
Pamunco
Nechamicock
Quackcohewan
Apocant
Rightkahauk
Wean-ock
Mamanahunt
Morsoc
Mattos
Pas-pahegh
Checopissowo
Assuwesska
Menamask
Wa
Cinquack
Acquack
Quawma
Acquin
Mon
Pamaunkey flu
Pamunkey flu
Pamunkey flu
Youghtanund flu
Chickahamania flu
Pamunkey flu
Pamaunkey flu
Pamunkey flu
Pamunkey flu
Pam

From a Native perspective, Smith's exploration of the Chesapeake may not have been so momentous. Acknowledging the biases of surviving records, almost all created by English chroniclers, the Native groups Smith claimed he encountered rarely or ever mentioned Smith or his visits in later narratives. No doubt to Native eyes, Smith was one of many strangers plying the waters of the Chesapeake at the end of the sixteenth and beginning of the seventeenth centuries. These nations almost certainly sized Smith up as he did them, perhaps contemplating just how they could take advantage of this wily stranger's technologies to leverage their own position. Smith was experiencing a dynamic landscape, a landscape that did not disappear but transformed; a landscape that remains visible even in the hurly burly of the twentieth century.

While the landscapes Smith witnessed and mapped have physically changed over the ensuing centuries, many nonetheless retain a visually evocative quality of the land before European invasion. Still others contain vibrant, modern-day places that are important to the communities of the Pamunkey, Mattaponi, and Upper Mattaponi. For the Chesapeake Trail, Indigenous Cultural Landscapes represent "the contexts of the American Indian peoples in the Chesapeake Bay and their interaction with the landscape" (National Park Service 2010:4.22). ICLs either contain or have a high potential for containing pre- and post-Contact Native American archaeological sites with large and relatively undisturbed surrounding landscapes. These landscapes should accurately reflect the culture and lifeways of the communities who lived within them (and often still do). These are dynamic landscapes, with broad and diverse areas used in different ways across seasons and over considerable time periods.

The York River, including the Pamunkey and Mattaponi rivers, has already been defined as a "high potential trail segment" in accordance with the National Trails System Act (NTSA) (NPS 2011: Section 2.4.2). This designation recognizes the York River's exceptional potential to provide a high-quality trail experience for visitors. High potential sites and segments identified in accordance with the NTSA, like the York, are a priority for protection. Further, the Interpretive Plan for the Chesapeake Trail calls for building a broad range of stakeholders for a solid support base for a holistic and broad-reaching trail experience (NPS 2015:39-40).

The York River, along with the Pamunkey and Mattaponi rivers, was also identified as a priority for ICL mapping by NPS Chesapeake Bay and the Chesapeake Conservancy. In 2015, St. Mary's College of Maryland developed a priority list by identifying variables within each watershed, including the presence of contemporary Native communities, the density of settlements depicted on Captain John Smith's map, the amount of rural and relatively undisturbed space, the growth rate of development over a 10-year period, the level of impact due to sea-level rise, and whether or not the watershed represented an important and/or pivotal landscape during the early occupation of the region by Europeans. Environmental variables indicative of ICLs, informed through the analysis of Late Woodland and Contact-period archaeological sites relative to their surroundings, were also used in the ICL priority study. The York River drainage emerged as a top priority for study (Strickland and King 2016).

The National Park Service Chesapeake Bay's and the Colonial National Historical Park's plan to identify the York, Pamunkey, and Mattaponi ICL presents an opportunity to serve the Pamunkey, Mattaponi, and Upper Mattaponi tribes, as well as to collect information critical for land conservation, natural and cultural resources preservation, education, and tourism. Additionally, a greater understanding of the indigenous history of the landscape can strengthen interpretation at the recently acquired Werowocomoco property. Downriver from Werowocomoco lies the Timberneck Farm tract, which was recently (2019) acquired by the Virginia Department of Conservation and Recreation (DCR). Currently the tract is owned by the Conservation Fund which has signed a Memorandum of Agreement with DCR. Before the rediscovery of Werowocomoco, it was long thought that Timberneck was the location of the Powhatan capital. The location of Werowocomoco at Purtan Bay corresponds more closely with maps made during the earliest days of English colonization. Virginia DCR has participated, along with tribal communities, in

the development of concept plans for visitor infrastructure and interpretation centered on Native history, including that of Werowocomoco.

How to Read and Use this Report

A great deal of information from multiple sources was collected as part of this study. This report attempts to synthesize this material into a readable narrative but, the fact remains, the histories and contemporary worlds of the Pamunkey, Mattaponi, and Upper Mattaponi tribes are simply too rich to compress into a single report. This narrative, then, should also be understood as a reference for interpreting the Chesapeake Trail and the communities here thousands of years before the English occupation of the land and, as this and many other reports have made clear, communities still here.

To assist readers with approaching the volume of information presented in this report, a "Chapter Highlights" section has been included at the beginning of each chapter. The "Chapter Highlights" sections function as a kind of detailed table of contents and allows readers a sense of the findings of the material in each chapter. Still, nothing substitutes for reading the details of this remarkable Native history and present, and readers should hopefully find useful information in the detailed narrative.

The report also aims to serve as a resource for the three tribes who may wish to use the ICL concept to participate in educational and conservation programs directly and indirectly affecting them. It is no secret that people of color have been underrepresented in land conservation movements and organizations (Finney 2014). The ICL concept can serve as an important tool for tribes to introduce their interests and concerns with respect to land conservation.

CHAPTER II
THE INDIGENOUS CULTURAL LANDSCAPE CONCEPT: PROJECT METHODOLOGY

CHAPTER HIGHLIGHTS

- The Indigenous Cultural Landscape concept as defined by the National Park Service represents "the context of the American Indian peoples in the Chesapeake Bay and their interaction with the landscape."
- Two geographical areas of focus for this study were defined, including a Core Project Area and an Extended Project Area. The Core Project Area includes the Pamunkey and Mattaponi river valleys and the Extended Project Area includes the York River valley.
- The project's chronological boundaries range from ca. 900 CE through the present.
- Project methodology included meetings, interviews, and/or driving tours with members of the Pamunkey, Upper Mattaponi, and Mattaponi; meetings and correspondence with non-tribal stakeholders; documentary research; and the analysis of land-related data available online using Geographic Information Systems (GIS).
- A number of previous studies of the three river valleys provided an important starting point for this project.

The effort to identify the York, Pamunkey, and Mattaponi Indigenous Cultural Landscape follows a methodology previously developed by researchers from the University of Maryland (UM) for the Nanticoke (Maryland) Indigenous Cultural Landscape (Sullivan, Chambers, and Barbery 2013). Researchers Kristin Sullivan, Erve Chambers, and Ennis Barbery (2013) reviewed the National Park Service's ICL concept along with a history of the study of indigenous landscapes and developed a methodology and criteria for identifying and representing ICLs in the Chesapeake Bay watershed. The UM team applied the methodology in the identification of the Nanticoke ICL on Maryland's Eastern Shore. The methodology was later adapted and revised by researchers at St. Mary's College of Maryland to fit the specific conditions and circumstances of the Nanjemoy and Mattawoman creek watersheds in southern Maryland (the Piscataway ICL) (Strickland, Busby, and King 2015).

St. Mary's College of Maryland was again enlisted to build on the methodology used in the Nanjemoy and Mattawoman creek watersheds and applied it to a portion of the Rappahannock River watershed. All of these previous studies revealed the value of defining ICLs within the Chesapeake Bay using a watershed-by-watershed focus, emphasizing the specific groups who made particular watersheds their home. While admittedly arbitrary, a watershed approach recognizes that the greater Chesapeake Bay watershed is highly variable and that the Native groups who occupied this region beginning some 15,000 years ago both shaped and were influenced by these local environments and ecologies. The watershed approach is also useful for keeping projects manageable in an era of scarce public funds (Sullivan, Chambers, and Barbery 2013; Strickland and King 2016).

Defining "Indigenous Cultural Landscape"

The Indigenous Cultural Landscape concept and its potential uses are described by the National Park Service Chesapeake Bay in the report, *Indigenous Cultural Landscapes Study for the Captain John Smith Chesapeake National Historic Trail* (Sullivan, Chambers, and Barbery 2013). This report along with the Captain John Smith NHT's Comprehensive Management Plan (CMP) states (as previously noted) that ICLs represent "the context of the American Indian peoples in the Chesapeake Bay and their interaction

with the landscape." These landscapes include "both cultural and natural resources and the wildlife therein associated with the historic lifestyle and settlement patterns and exhibiting the cultural and aesthetic values of American Indian peoples in their totality" (NPS 2011).

A set of basic criteria for identifying landscapes found within an ICL was devised by the National Park Service in 2011. These criteria include:

- Good agricultural soil (fine sandy loam, 1-2% grade);
- Fresh water source (river or creek water may be brackish);
- Transportation tributary adjacent;
- Landing place (confluence of tributaries optimal);
- Marshes nearby (for waterfowl, shellfish, reeds, tubes, muskrat, turtles);
- Brushy areas (for small game, berries);
- Primary or mixed deciduous forest (for larger game, nuts, bark, firewood);
- Uplands that could support hunting activities (and a variety of wildlife);
- Proximity to known American Indian communities (documented through ethno-history or archaeology, may be post-Contact);
- Protection from wind; and
- High terrace landform.

Criteria for smaller or connective parcels include:

- Area of recurrent use for food or medicine acquisition (shell middens, plant gathering sites);
- Areas of recurrent use for tool acquisition (quarries);
- Places with high probability for ceremonial or spiritual use (even if not documented), or known by descendant community to have been used for ceremony;
- Trails used as footpaths (usually became colonial roads, sometimes are today's highways and local roads);
- Parcels that can be interpreted as supporting activities of Indian community sustainability, such as trading places or meeting places; and
- Places associated with ancestors, or part of a descendant community's past known through tribal history, ethno-history, or archaeology.

An additional set of criteria tailored to the past and current ICL studies (including the Nanjemoy/Mattawoman and Rappahannock watersheds) emerged from comments and suggestions made by project stakeholders:

- Areas associated with indigenous use in the past;
- Places known through historical records (for example: reservation and mapped settlements);
- Ecologically significant areas;
- Archaeologically significant areas/sites;
- Spiritually significant areas/sites (including burial sites);
- Frequented waterways;
- Places with wide viewsheds of the river landscape;
- Lands that are threatened/need protection;
- Populations of sensitive and endangered species;
- Historic meeting places;
- Land/places associated with tribal elders;
- Land/soils conducive for pottery production; and
- Places with high potential for interpreting indigenous culture and history.

Of particular interest to the NPS is identifying landscapes which both meet ICL criteria and are evocative of the historical watershed. Additionally, with the National Park Service's purchase of the Werowocomoco site on the north bank of the York River, interpretation of the broader landscapes will be explored. Research questions to this effect include:

- What makes Werowocomoco unique?
- Are there any ecological or social/cultural variables that determined the placement of Werowocomoco?
- What are the relationships between Werowocomoco and other contemporary settlements?

Lastly, and fortunately, much of the Pamunkey, Mattaponi, and York watersheds remain relatively undeveloped, free of urban and suburban development with minor exceptions around the towns of West Point and Yorktown. These towns, though developed to varying degrees, may contain archaeological sites, be situated on historical tracts associated with indigenous people, or be part of a greater landscape meeting the criteria for being included as part of the ICL. While these more developed landscapes are not particularly evocative of the pre-Contact or early seventeenth-century Native landscape, the National Park Service nonetheless recognizes these areas as places of importance to modern tribal members and therefore contributing to the ICL. For this project, the former Richmond and York River Railroad, now part of the Norfolk Southern Railway running from Richmond to West Point, is considered important to the ICL. This railway was a daily part of Pamunkey life, as it runs through their reservation and would stop at the adjacent plantation known as Lester Manor. This railway stop served as a community hub and was a vehicle (literally and figuratively) for Pamunkey diaspora throughout the region during the nineteenth and twentieth centuries.

The Study Area: Geographical and Chronological Boundaries

Establishing the parameters for the York, Pamunkey, and Mattaponi river project area was based on a two-pronged approach consisting of a Core Project Area and an Extended Project Area, measuring a total of 1,017 square miles (Figure 2). The previous Rappahannock ICL study was about half that size, so a different strategy for approaching the present study was necessary. Throughout this report, the term Project Area will be used to discuss the combined Core and Extended Project Areas.

The Core Project Area, measuring 725 square miles, includes all of the Pamunkey River watershed from West Point to (roughly) the intersection with US Route 360 near Acquinton/Manquin and all of the Mattaponi River watershed from West Point to the Essex, Caroline, and King and Queen county borders near Gether, Virginia. Within the Core Project Area near the ridge separating the Mattaponi and Rappahannock watersheds is the Rappahannock Tribal Center. Data from the earlier Rappahannock ICL study was incorporated in the final composite map as shown in Chapter VI.

The Extended Project Area, measuring 292 square miles, includes all of the York River from West Point to its confluence with the Chesapeake Bay. This secondary focus area was included to develop a greater understanding of the broader landscape and to include the ancestral capital of Werowocomoco. Together, the Core and Extended Project Areas measure 1,017 square miles.

It should be emphasized that while the two project areas within this study are focused on watersheds, it became apparent that urban areas outside of these bounds were important to telling the story of the diaspora of families that are part of the contemporary tribal communities. This is especially important to the story of the nineteenth and twentieth century histories of the tribes. Specific histories in that regard are highlighted in both Chapter III (Historical Context) and Chapter V (section on individual tribal information).

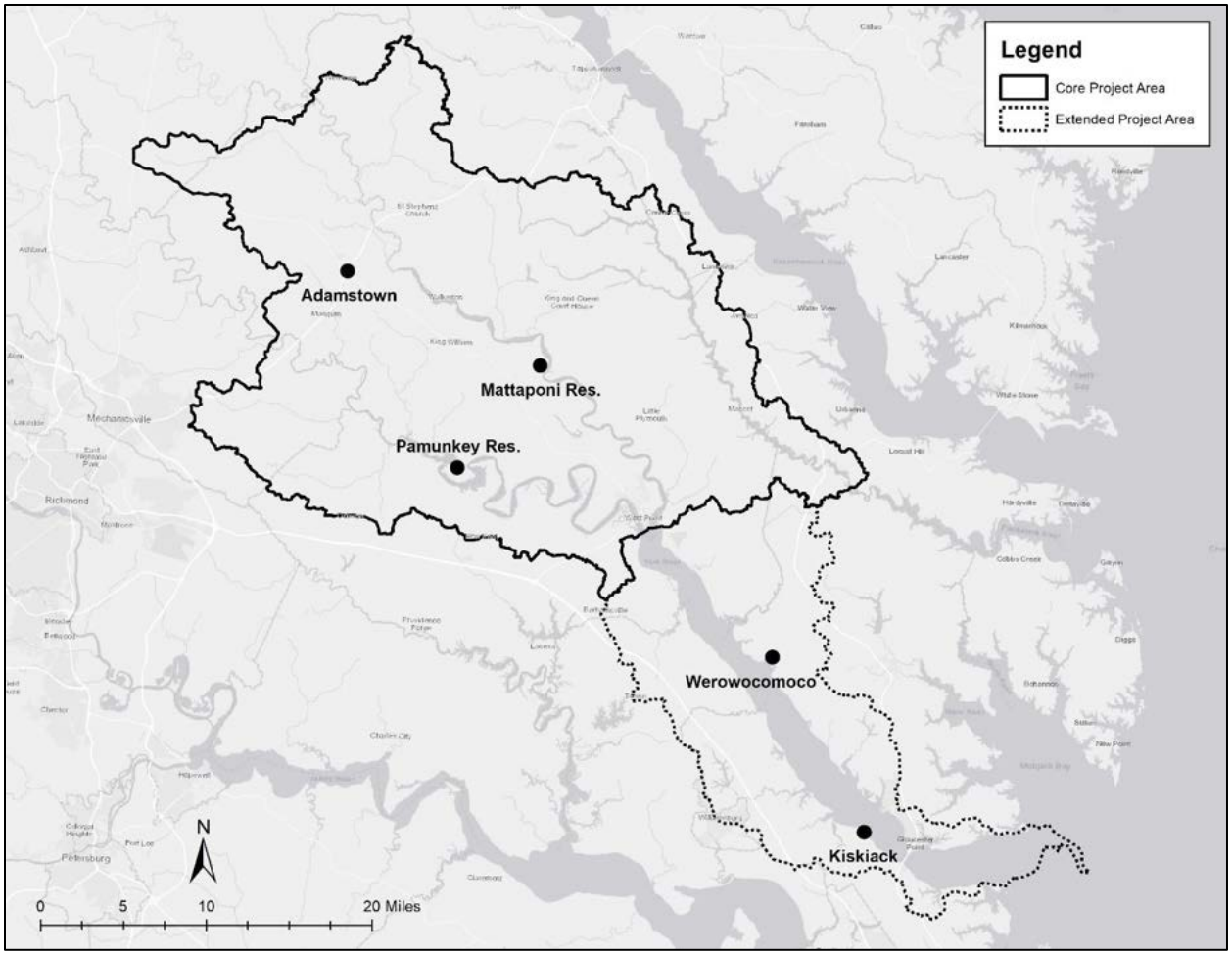

Figure 2. Core and Extended Project Areas.

The Project Area includes 40 settlements depicted on the Smith Map (see Figure 1). Of these 40 settlements, 32 are within the Core Project Area while the remaining eight are along the York River in the Extended Project Area. The settlements in the Core Project Area include Mamanassy in the eastern fringe to Manaskunt along the Pamunkey River and Passauncack along the Mattaponi River. Just outside the Core Project Area along the Pamunkey River are the settlements of Youghtanan, Washasatiack, Askecack, Menoughtass, Enekent, and Maskunt. The Extended Project Area includes settlements from Oquonock, just south of West Point, to Kiskiack near Yorktown. Interestingly, and perhaps mistakenly, the settlement of Pamuncoroy (also known as Pamunkey) is not depicted on Smith's map in the same manner despite the importance of this settlement to Powhatan history. The present Pamunkey reservation and oral history places Pamuncoroy on the north side of the Pamunkey River. Smith depicts the settlement on the south side of the river.

The Core Project Area also includes the Pamunkey and Mattaponi reservations. While the sizes of the two reservations have diminished from their original and larger size in the seventeenth century, they remain the locus of Pamunkey and Mattaponi tribal activity today as in centuries past. The Upper Mattaponi, while not residing on a reservation, primarily live in the area historically known as Adamstown near present-day Central Garage in King William. Individual tribal members own land throughout old Adamstown and the tribe itself has landholdings, including the Sharon Indian School (tribal center), Indian

View Baptist Church, and the Upper Mattaponi Tribal Grounds, the latter which is used to host community events.

The project's chronological boundaries range from ca. 900 CE through the present (archaeologically, the Late Woodland and Contact/post-Contact periods). The beginning date of 900 CE was defined on the basis of available archaeological evidence. This period marks an increase in settlement activity throughout the Chesapeake, especially after 1300 CE. The lack of archaeological survey along the north bank of the York River and in counties abutting the Pamunkey and Mattaponi rivers, however, makes this interpretation difficult to test and a problem for further investigation. Similarly, the lack of reported post-Contact sites (particularly those dating from the eighteenth century on) is probably a result of "[archaeologists not] looking for the correct artifact assemblages" rather than because of an absence of population during that period (Baumgartner-Wagner 1979:54). This observation belies a critique that archaeology in the Chesapeake and elsewhere has been constrained by a focus on sites rather than on landscapes, and a limited and limiting definition of what "Contact" means (Busby 1995, 2010:90-94).

Project Methodology

The methodology used to identify the York, Pamunkey, and Mattaponi ICL included interviews, meetings, and driving tours with members of the Pamunkey and Upper Mattaponi tribes, a single meeting with the Mattaponi chief and councilors, correspondence with non-tribal stakeholders, and the collection and manipulation of large sets of data available online for free or through inexpensive pay-walls. Non-tribal stakeholders included land use planners and managers from counties throughout the Core and Extended Project Areas, historic preservationists/archaeologists, and land managers with the Virginia Department of Forestry and Department of Conservation and Recreation.

A complete list of project participants can be found in Appendix I. Table 1 lists the meetings held, their dates, and meeting location.

Date	Group/Organization	Location
05/27/2017	Upper Mattaponi Pow-wow	Upper Mattaponi tribal grounds
06/08/2017	Upper Mattaponi tribal introduction	Sharon Indian School
08/19/2017	Pamunkey tribal introduction	Pamunkey Reservation
09/25/2017	Upper Mattaponi tribal site tour	Various sites, Mattaponi and Pamunkey rivers
10/09/2017	Pamunkey tribal site tour	Pamunkey Reservation
02/03/2018	Mattaponi tribal introduction	Mattaponi Reservation
03/14/2018	Pamunkey tribal site tour	Pamunkey Reservation
09/01/2018	Upper Mattaponi Federal Recognition Event	Upper Mattaponi tribal grounds
09/28/2018	Non-tribal/Archaeological stakeholder meeting	Upper King William Library
12/06/2018	Final Upper Mattaponi tribal meeting	Sharon Indian School
01/23/2019	Pamunkey tribal meeting	Pamunkey Reservation
08/15/2019	Final Pamunkey tribal meeting	Pamunkey Reservation

Table 1. Meeting dates, groups, and locations.

The steps taken to collaborate with these various partners were as follows:

Tribal Engagement

Important information for this project was provided by members of the Pamunkey, Upper Mattaponi, and Mattaponi tribes. Information about the tribal landscape was collected from Pamunkey and

Upper Mattaponi representatives during organized driving tours with stops requested by the two tribes and some stops suggested by project staff. For the Pamunkey, two driving tours were within the Pamunkey Reservation and immediate surrounding area. Two tours were necessary in order to cover the number of places to visit and the overall size and scope of their lands. For the Upper Mattaponi, a single driving tour was conducted which covered individual properties spread over a longer distance. The primary contacts for the Pamunkey Tribe were Ashley Atkins Spivey (then Director, Pamunkey Indian Tribal Resource Center), Allyson Snead (Program Specialist, Pamunkey Indian Tribe), and Lauren Fox (Director, Pamunkey Indian Resource Center). The primary contact for the Upper Mattaponi was Chief Frank Adams.

A driving tour was not organized for the Mattaponi tribe. The Mattaponi expressed interest in the project but chose not to participate due to other tribal commitments. The tribe had just completed participating in an archival and ethnographic research project conducted by the College of William and Mary (Woodard and Moretti-Langholtz 2017). Tribal members were unavailable so soon following that project. In addition, while the Mattaponi tribe viewed this ICL research as a useful addition to their Federal recognition application materials, other concurrent and contracted research had not yet identified the archival gaps that could be filled through this project. Project staff did have an introductory meeting with Chief Mark Custalow and other leadership followed by a tour of the shad hatchery.

To ensure that the approach, procedures, and data management of the project were in keeping with applicable standards, indigenous traditional knowledge and intellectual property rights statements and considerations were reviewed (Christen 2015; Hardison 2014; United Nations 2007) along with ethics statements of the American Anthropological Association (2012) and the Oral History Association (2009). Project staff also reviewed the National Park Service's legal mandates (Crespi and Mattix 2000). Additionally, the project was subject to approval by the Institutional Review Board of St. Mary's College of Maryland (see Appendix II for a copy of the consent form). Research using documents held at the Pamunkey Reservation were subject to a non-disclosure agreement so as to not reveal sensitive information. All materials presented within this report have been edited and authorized before final report publication. A copy of this non-disclosure agreement can be found in Appendix III.

Informal introductory meetings were individually held with representatives from each tribe to discuss the project, logistics, and level of participation. More formal meetings with larger groups of tribal representatives and NPS were held at the conclusion of each driving tour. The first driving tour and meeting took place on September 25, 2017 with the Upper Mattaponi and the first driving tour and meeting with the Pamunkey took place on October 9, 2017. The second driving tour with the Pamunkey was done on March 14, 2018. These meetings consisted of an introduction to the project and to project staff, the driving tour itself, and pre- and post-tour discussion.

The first meeting/driving tour with the Upper Mattaponi began and ended at the Sharon Indian School near Central Garage, Virginia. The driving tour visited properties on the south bank of the Mattaponi River from Beulahville to Aylett and a single property on the north bank of the Pamunkey River known as Pampatike (Figure 3). Some of the potential driving tour locations requested by the Upper Mattaponi were on private property. Some land owners generously granted permission to visit their property while others did not or could not. The first and second driving tours with the Pamunkey visited sites within the present-day reservation land and adjacent properties including Old Town Farm and Lester Manor (Figure 4). During post-tour discussion, tribal members in all instances were invited to mark large-scale paper maps with places and areas they considered to be important to the tribe. The second meeting/driving tour with the Pamunkey also served to review data previously collected for accuracy.

A follow-up meeting with the Upper Mattaponi took place on September 1, 2018 at their tribal grounds during a celebration for receiving Federal recognition following the passage of H.R. 984, the Thomasina E. Jordan Indian Tribes of Virginia Federal Recognition of 2017. H.R. 984 was passed on

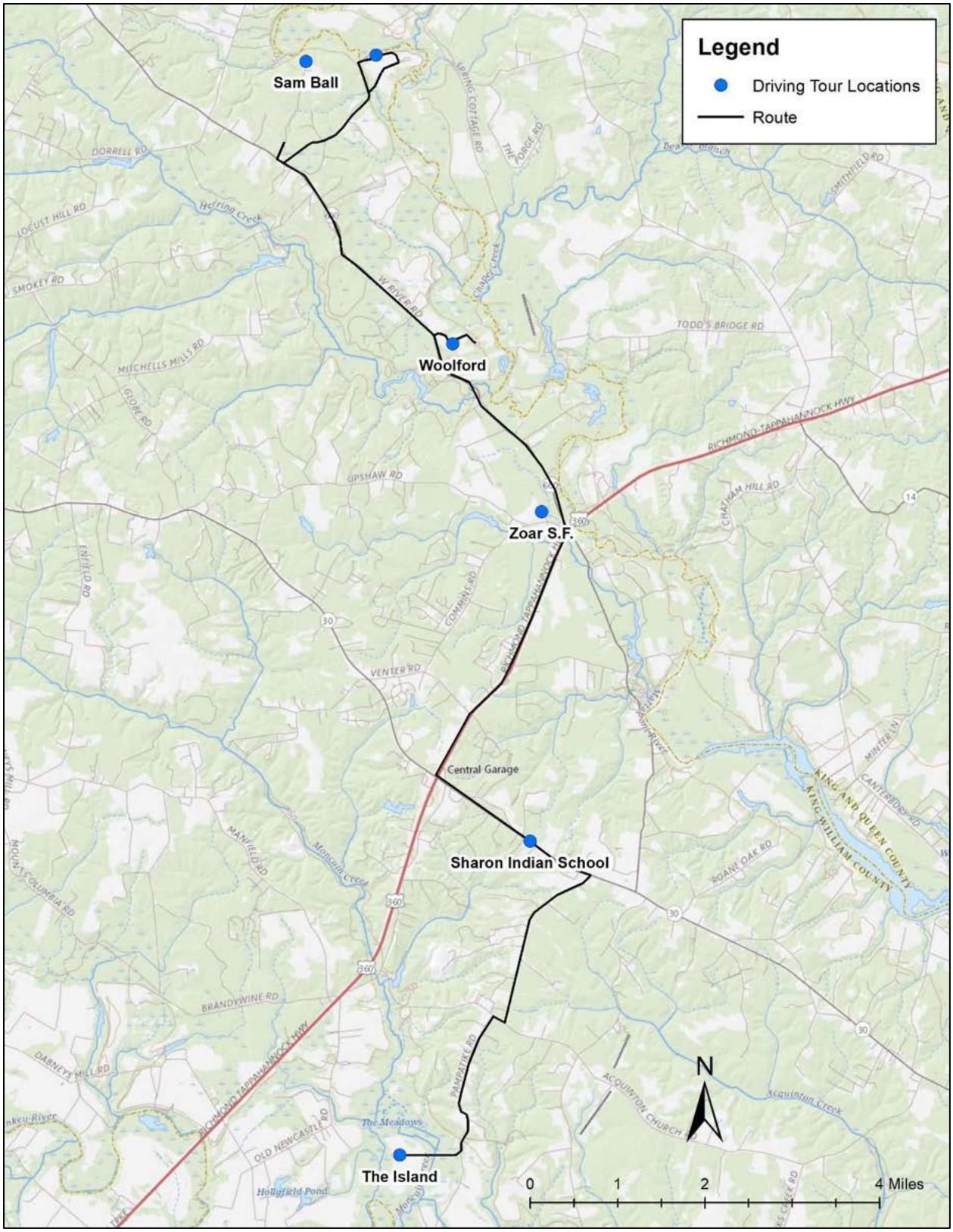

Figure 3. Upper Mattaponi driving tour route.

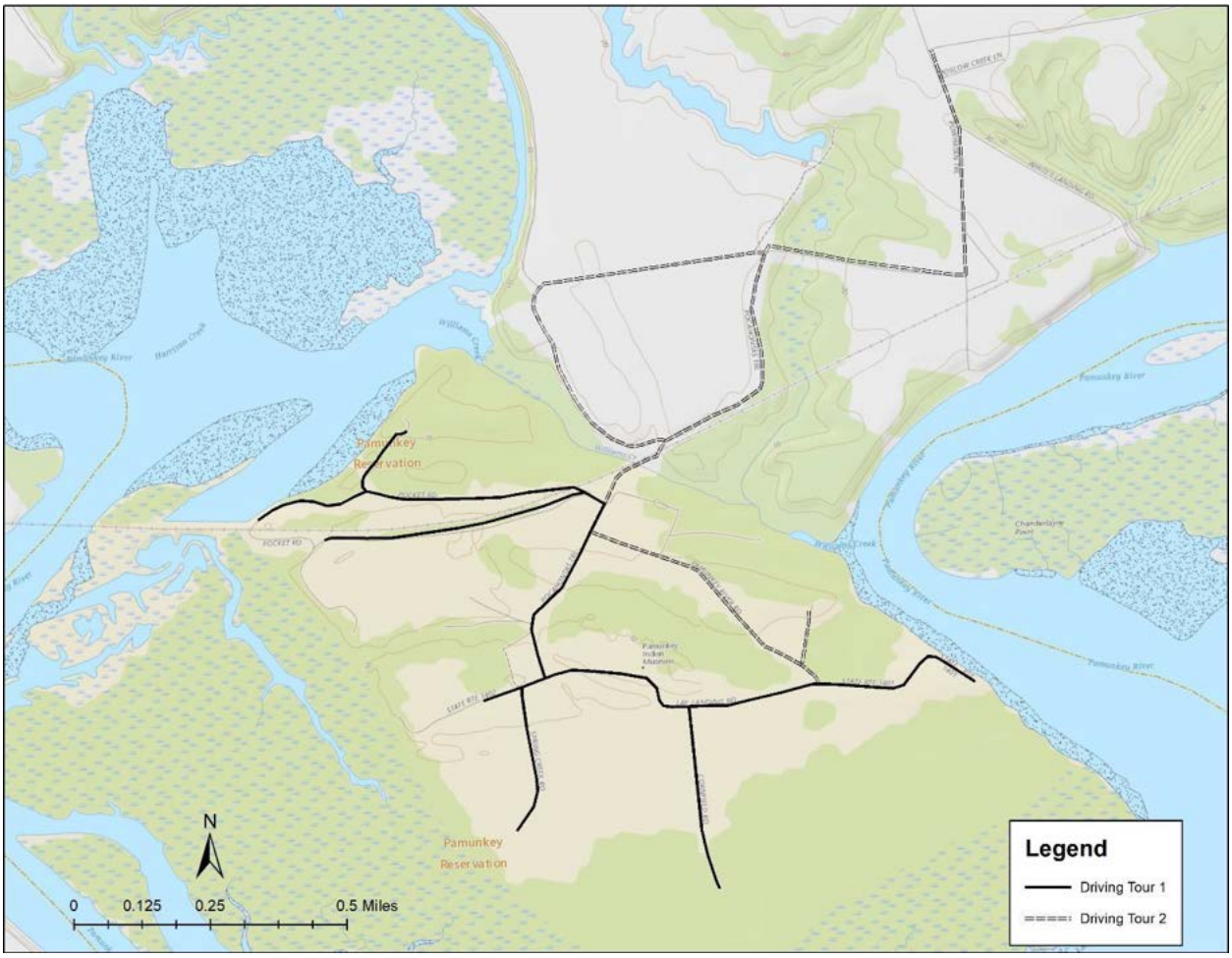

Figure 4. Pamunkey driving tour routes, Pamunkey Reservation.

January 11, 2018 and signed into law on January 29, 2018. A table was set up at the outdoor celebration with maps and findings-to-date available for review data by attendees.

Final meetings were held on December 6, 2018 (for the Upper Mattaponi) and January 23, 2019 and August 15, 2019 (for the Pamunkey). These final meetings were used by project staff to present preliminary findings concerning the ICL using slides and large-scale printed maps. The presentation and maps incorporated information collected from each tribe throughout the project as well as data from non-tribal sources. Materials for review were also made available electronically to tribal members in order to solicit further consideration and comments. The final draft of this report was also reviewed by tribal members.

Non-Tribal Stakeholder Engagement

Non-tribal stakeholders were identified by seeking out points of contact from local, state, and Federal land managers within the Core and Extended Project Areas. Private property owners of significant parcels were contacted in advance of the driving tours. Organizations and individuals involved in community development, cultural and historic resource preservation, land use and recreational planning, and land and resource conservation were also contacted and invited to participate. Non-tribal subject matter experts in archaeology, history, ethnohistory, and Chesapeake ecology were also contacted. All were invited

to comment and attend a stakeholder meeting held in September 28, 2018. A list of non-tribal stakeholders and their affiliations can be found in Appendix I.

In-person meetings with non-tribal stakeholders involved a presentation by project staff about the scope, goals, and preliminary observations of the project. Large-scale hard copy maps were placed on tables for viewing and marking. Input was also collected through comments provided at meetings and by subsequent electronic sharing of data by stakeholders. The non-tribal stakeholder meeting was broken into two groups consisting of land planners and conservationists in one group and archaeologists, historians, cultural resource managers, and historic preservationists in the other group. The meeting was held at the Upper King William branch of the Pamunkey Regional Library in Central Garage, Virginia.

The following organizations were represented at the non-tribal stakeholders meeting:

- King William Historical Society
- King and Queen County Planning and Zoning
- King William County Planning and Zoning
- Naval Weapons Station – Yorktown
- Virginia Department of Forestry
- Virginia Department of Historic Resources
- Virginia Department of Conservation and Recreation
- York County Planning and Zoning
- York County Historical Museum

GIS Mapping and Modeling Methodology

Geographic Information Systems (GIS) have revolutionized the collection, analysis, and interpretation of spatial and geographical data. Using digital technologies, GIS can be used to manage and model large amounts of spatial data, with much of this data available online and free of charge. GIS technologies have transformed the study of cultural landscapes and, not surprisingly, GIS proved indispensable for this project, not only for managing information but for revealing meaningful relationships among various types of landscape data. GIS also allowed the creation of a legacy database for the National Park Service, the Pamunkey and Upper Mattaponi tribes, and other stakeholders to use to test the findings of this report or to develop new avenues of inquiry.

Certain data themes emerged during meetings and other forms of engagement with tribal and non-tribal stakeholders. In GIS, a data theme is a "collection of common geographic elements such as a road network, a collection of parcel boundaries, soil types, an elevation surface, satellite imagery for a certain date, well location," and so on (ESRI 2015). For the present project, information noted on hard-copy maps by the Pamunkey and Upper Mattaponi tribal members, land planners, land managers, land conservationists, and historic preservationists was important for identifying data themes specific to the Project Area. The information from this exercise was digitized within GIS using the Universal Transverse Mercator (UTM) grid for zone 18N and measured in meters as the coordinate system. These data were then analyzed along with other data themes.

Many other data themes used in creating the ICL GIS came from third-party sources, with some of these sources requiring special data licensing agreements. The Virginia Department of Historic Resources (DHR), for example, requires a one-time fee (good for one-year access) and a data licensing agreement in order to protect confidential archaeological site location information. Other data layers were provided through state and Federal agencies with restrictions limited only to the liability held by those offices in terms of data accuracy. This data was free and did not require any written data use agreement. These datasets, many of which are very large, have a wide range of applications and are essential for the

Data	Source	Post Processing
Soils	USDA-NRCS	Querying crop yield estimates and clay content. Analysis of statistical correlations.
Land Use	NLCD	Raster reclassification of wetland, forested, and developed/farmed areas
Wetlands	NWIS	Identification of marsh wetland types
Digital Elevation Model	USGS 3D Elevation Program	Raster reclassification for analysis of statistical correlations.
Protected Lands	VDCR	-
Archaeological Site/Survey	VDHR	Manual identification and confirmation of period specific sites. Conversion to centroid points for statistical analysis.
Fish Resources	VDGIF	Fish hatcheries and anadromous fish use area mapping.

Table 2. Sources of data used in this project (Key: USDA-NRCS: United States Department of Agriculture Natural Resource Conservation Service; NLCD: National Land Cover Database; NWIS: National Wetland Inventory Survey; VDCR: Virginia Department of Conservation and Recreation; VDHR: Virginia Department of Historic Resources; VDGIF: Virginia Department of Game and Inland Fisheries).

modeling of the environmental and land use variables examined as part of this project. A summary of the environmental and land use data can be found in Table 2.

Soil data acquired from the United States Department of Agriculture's Natural Resource Conservation Service included both spatial and tabular data in the form of shapefiles and Microsoft Access databases. Comprehensive soil attribute data is stored within the Access database, including (but not limited to) information on potential agricultural yields and physical properties of each soil. Yield information used in this project were taken from estimated potential yields of corn in a non-irrigated setting. These estimates are generated based on yearly reported averages of individual soil types and conditions using modern farming techniques. While not a perfect analog, these crop yield estimates are useful in identifying relative agricultural productivity of the land.

Wetlands data, particularly information about marshes and marsh environment was taken from the National Wetland Inventory Survey. How this data was parsed and analyzed is described in more detail in Chapter VI of this report.

The identification of protected and unprotected lands within the Project Area was important to all stakeholders. Protected lands within the Project Area are important for their ability to represent the rural and less developed nature of the landscape in a way that may be considered evocative of the ICL. Exceptions to this general characterization of the Project Area are evident, especially within the Extended Project Area that includes urban/suburban and military land uses near and around Yorktown. Various easements held on privately owned land are considered a form of protected land as part of this project. These data were made available through the Virginia Department of Conservation and Recreation (VDCR). Data from VDCR is not updated as frequently as data from individual counties, so an effort was made to contact planning offices from each county in the Project Area for the most recent data layers. Protected land also represents parcels and tracts of land that are free from future land use change, subdivision, and development. This data theme is more particularly described in Chapter V of this report.

The preservation, study, and revitalization of anadromous fish resources, such as shad and sturgeon, has been important work for both the Pamunkey and Mattaponi tribes, both of which operate shad hatcheries. Maintaining healthy populations of shad is essential to traditional lifeways to both tribes.

Although shad is a protected species, the Pamunkey and Mattaponi are given special exemption from Virginia Marine Resource Commission regulations banning the possession of shad (or river herring as they are referred to). Particular data themes regarding shad fishing and fisheries was derived from Virginia Department of Game and Inland Fisheries (VDGIF) datasets on fish hatcheries and anadromous fish use areas.

Previous Studies

The tribes of the Pamunkey and Mattaponi rivers have long held a fascination for historians and other scholars for their important role in American history. Four previously-conducted studies are of important value for this project, including the work done as part of what is known as the King William Reservoir project, the work of Frank Speck, Ashley Atkins Spivey's study of the subsistence practices and market economy of the Pamunkey in the nineteenth and twentieth centuries, and Martin Gallivan's study of the Powhatan landscape at Kiskiak and Werowocomoco.

The Newport News King William Reservoir project in the 1990s was a contentious engineering project which ultimately never came to fruition. The purpose of the reservoir was to supply water for the Newport News community. The failure of the project to move forward was a victory for indigenous communities in King William County. The reservoir project would have involved the construction of an earthen dam on Cohoke Creek, upstream from Cohoke Millpond, less than three miles northeast of the Pamunkey Reservation. This dam would have created a reservoir measuring roughly 1,526 acres in surface area. In addition, a pump station and pipeline would link the reservoir to the Diascund Creek reservoir in New Kent County. To get to New Kent County, an underwater pipeline would have to cross the Pamunkey River and adjacent wetlands. On the Mattaponi side, an intake and pumping station was proposed at Scotland Landing, located three miles upriver from the Mattaponi Reservation. This intake and pumping station would withdraw 75 million gallons of water from the Mattaponi River each day (US Army Corps of Engineers 1997).

The reservoir project required a permit from the U.S. Army Corps of Engineers. As part of its Section 106 responsibilities, the Corps commissioned a Traditional Cultural Properties (TCP) study by the College of William and Mary under the direction of Kathleen Bragdon (Bragdon et al. 1999). Though at the time the Pamunkey, Mattaponi, and Upper Mattaponi were not Federally-recognized tribes, the Corps of Engineers treated their state-recognized status as equivalent for the purposes of consultation and stakeholder input.

The TCP study examined the historical and traditional cultures of the region using historical documents and accounts, nineteenth- and twentieth-century ethnographic data, traditional and contemporary plant use, and contemporary ethnography. Contemporary ethnographies were collected by distributing a questionnaire to each of the three tribes to collect quantitative and qualitative data as it related to indigenous use of the landscape and included open-ended questions concerning opinions about the reservoir project itself.

Important information collated in the TCP study and pertinent to the current ICL study are places of importance that were documented in the late nineteenth and early twentieth centuries by Albert Gatschet and Frank Speck. Gatschet identified several places or place names of Native origin that were related to him by Native people, indicating places within the landscape that were important at that time. Many are the names of creeks and streams bearing their original names, while a few others were communities in the past that survived in memory. These are not the only places with names of indigenous origin (see Appendix IV), but ones that were documented by Gatschet. They are as follows:

- Cohoke (railway station and creek)
- Manquin Creek/Swamp
- Mangohick
- Pamunkey/Pamunkey Creek (above White House)
- Mattaponi River/Creek
- Matchicomico Swamp
- Wakema
- Nicatawan Creek (Necotowance)
- Aquiston/Acquinton Creek
- Pippin Tree Ferry (Piping Tree)
- Pamptikike Farm (Pampatike)
- Tottopotamoy Creek
- Anseamancook Creek
- Mattacocy Creek
- Rowanty Creek
- Tuckahoe Brook
- Delaware (West Point)
- Manchuway Ferry
- Jamestown (Kings River)
- Cumberland Town

The TCP study noted several activities that tribal communities said were important to their everyday lives and traditions. These activities included pottery making by the Pamunkey and Mattaponi, fishing, trapping and hunting, storytelling, and traditional uses of native and contemporary plants. The history of pottery making among the tribes is one with an evolving history in the late nineteenth and early twentieth centuries. When Frank Speck visited the Pamunkey Reservation in the 1920s he noted that several older women were still making pottery. These women informed him that, because of the mass production of ceramics, the practice at Pamunkey had been in decline since the second half of the nineteenth century. Ethnologist John Pollard (1894:17-19) noted a few decades earlier that "in former times[,] the opening of a clay mine was a great feast day with the Pamunkey," where "the whole tribe, men, women, and children were present, and each family took home a share of the clay." A revival of Native-made pottery and education came in the 1930s when B.H. Van Oot, the state supervisor of Trade and Industrial Education, helped to establish pottery schools, still in use to this day.

Ashley Atkins Spivey (2017), an archaeologist and member of the Pamunkey tribe, explored the production of pottery and other subsistence practices of the Pamunkey from 1800 to 1900 in her doctoral dissertation. Spivey conducted fieldwork at the Raymond Bush site (44KW0029), located on the reservation, in a search for information about Colonoware[1] ceramic production. The site itself yielded evidence of occupation dating back 5,000 years. Spivey considered two areas of focus: root cellars and ceramic production. Along with the archaeological evidence, oral histories, and the account of Pollard in the 1890s, Spivey concluded that production of ceramics at the site represented the work of individual families over a long period of time (across generations). This pottery was "both produced and sold within the individual households of female potters." This corresponds with Pollard's account that families and individual households would take away clay after the opening of clay mines. Among the artifacts Spivey uncovered were unfired clays, likely from one of these clay mines.

Spivey also provided a comprehensive overview of fishing practices in the nineteenth and into the twentieth centuries. Anadromous fish, including sturgeon, herring, and shad, were particularly important. "Water fences" were placed at the openings of creeks which were expertly constructed so fish could pass over them at high tide, but become trapped behind them when the tide receded (Figure 5). The concentrated fish behind the fence, or what Frank Speck called "hedges," would then be caught by spearing, drift nets, or by jig hooks (for bottom feeding fish such as sturgeon). Much of the fish sold by the Pamunkey would go to the Lester Manor train station, adjacent to the reservation, and from there as far as the 17th Street Market in Richmond, Virginia. Sturgeon populations have been decimated in the decades since, but shad and herring are still an important part of tribal life (Spivey 2017:135-140). Shad hatcheries at the Pamunkey and Mattaponi reservations are still in use today and provide a wealth of knowledge about the life cycle of the fish and the health of the river ecosystem. Mattaponi Chief Mark Custalow noted that the Mattaponi

[1] Colonoware is the term used by archaeologists to describe hand-built, low-fired ceramics typically made in European forms.

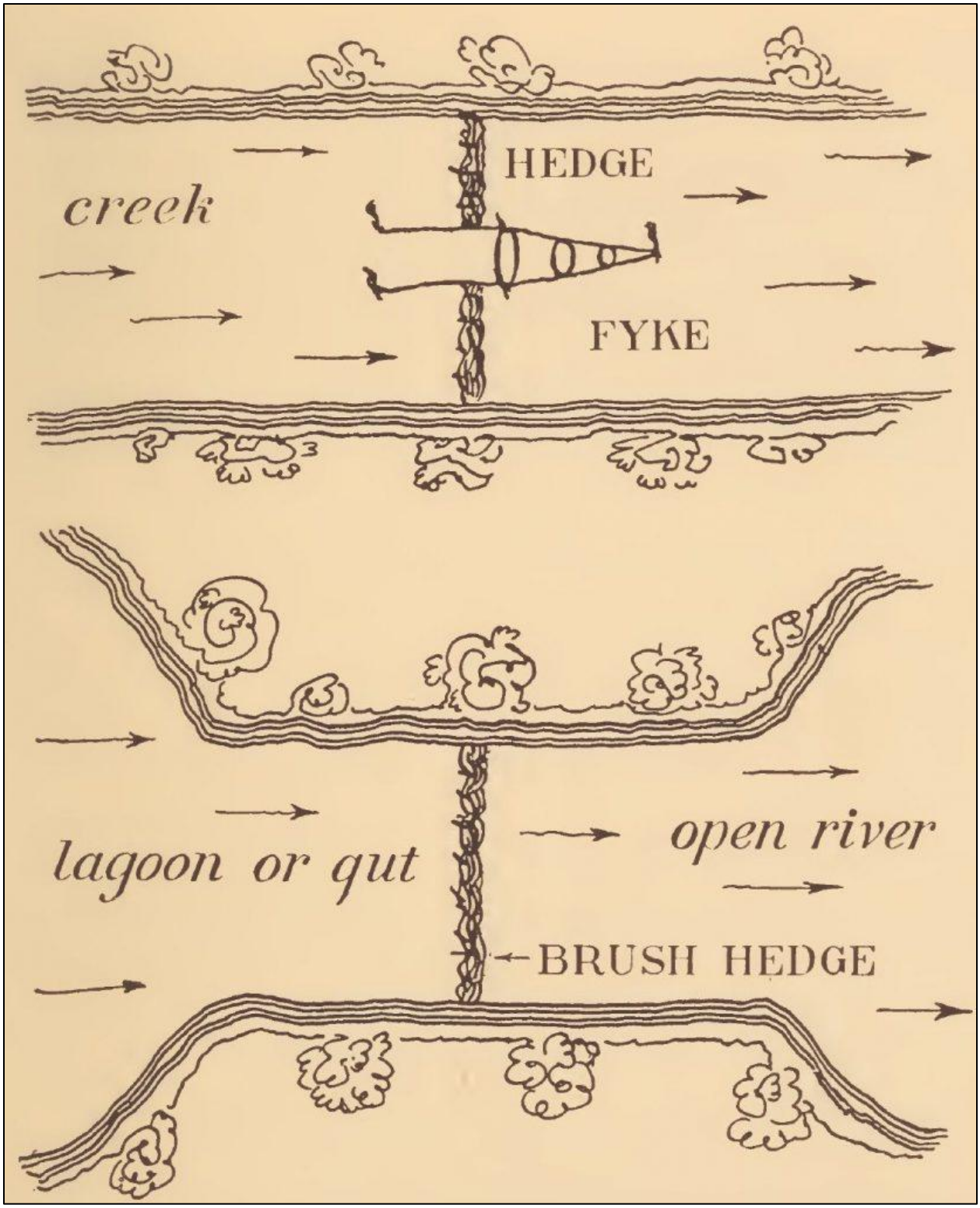

Figure 5. Diagram of tidal traps (Source: Speck 1928).

run their hatchery as part of a sense of obligation to Nature and to the Commonwealth of Virginia for allowing the tribe to run the hatchery.

Hunting and trapping were also important subsistence activities noted in the TCP. Communal deer hunts took place on the Pamunkey Reservation about two to three times a year (Bragdon et al. 1999; Speck 1928). Bragdon also noted that most men in all three tribes participate in the hunting of deer and rabbit. The Pamunkey informed the ICL team of hunting grounds along the south end of the reservation. Tribal hunting grounds were noted by Speck (Figure 6) where trapping also took place using deadfall traps for animals such as raccoon, possum, muskrat, mink, and otter (Figure 7). The Upper Mattaponi noted important hunting properties around Adamstown and a hunting property west of Aylett.

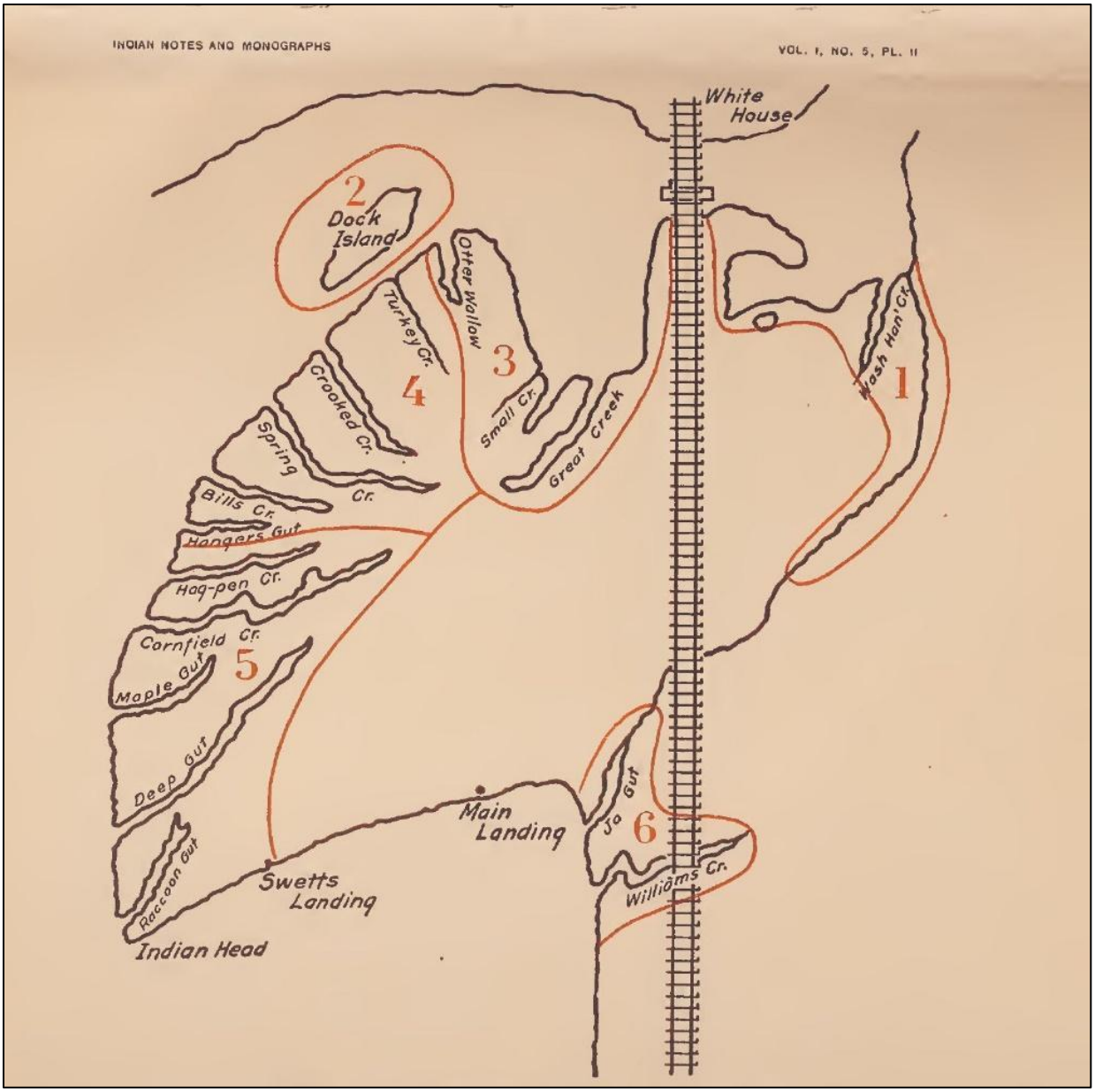

Figure 6. Pamunkey tribal hunting/fishing grounds (Speck 1928).

Figure 7. Former Pamunkey tribal leader Warren Cook demonstrating deadfall trap.

Traditional folklore of the three tribes was also documented in the TCP. While not all dealt with specific places within the landscape, a few did. Among the stories told were of hearing cries and singing around "Powhatan's mound" located on the northwest end of the reservation by the rail tracks. Many of the stories passed down were about animals such as rabbits, turtles, and deer. Others followed central characters in the historical narrative, such as Opechancanough and Pocahontas (Bragdon et al. 1999; Bragdon and Moretti-Langholtz 1998).

Native food sources are also discussed in the TCP, many of which are still exploited and used to this day. Table 3 summarizes the common names of native plant sources, their use, and where to find them. Environments where these food sources can be found have been edited from their descriptions in the TCP by cross-referencing them with the Digital Atlas of Virginia Flora produced by Virginia Botanical Associates. Many greens are/were collected from marshes, while others are found in or along other wetlands, along field edges, bank ditches, and upland forests, making use of a diversity of landscapes. These plants have a variety of uses, including for salad or cooked greens, berries, edible seeds, beverages/teas, and seasonings.

Plant	Use/Type	Where
Brassicaceae leaves, flowers/buds	Salad plants, seasoning	Old fields/ meadows, & edges of roadways
Poke	Cooked green	Open/rich soils of ruderal areas
Pickerelweed	Salad plants, cooked green	Tidal marshes and swamps, alluvial swamps, & ponds
Water hemp	Cooked green	Tidal marshes and swamps, alluvial swamps, & ponds
Swamp dock	Cooked greens	Alluvial, tidal, and maritime swamps. Ponds.
Swamp Rose-Mallow	Cooked greens	Ponds. Tidal marshes/swamps & alluvial swamps
Swamp milkweed flower	Seasoning/salads	Riverine shores, wet fields, swamps, & marshes.
Common Cattail	Raw/Cooked /Flour	Tidal marshes, ponds, swamps, & other wetlands
Groundnut root	Root vegetable/Edible seeds	Floodplain forests, marshes, stream banks, & low wet fields
Arrow arum (tuckahoe)	Root vegetable/Flour/ Edible seeds	Tidal marshes/swamps, ponds, & spring marshes
Common Spatterdock	Root vegetable	Tidal freshwater marshes, mud flats, & ponds
Arrowhead/ Duck Potato	Root vegetable/ Edible seeds	Tidal freshwater marshes, ponds, swamps, ditches, & alluvial forests
Wild bean/ Beach Bean	Edible seeds	Dunes, beaches, tidal shores, floodplain forests, sandy areas
Wild rice	Edible seeds	Tidal marshes/swamps
Beech and hickory nuts, Black walnut, and chinquapin	Nuts/Nut butter/Oil/Flour	Rich upland forests, floodplain forest
Acorns	Flour	Dry upland forests
Wild Rose (Swamp Rose)	Beverage	Swamps, tidal marshes, & ponds
Persimmon Leaves/Berries	Beverage/Berry	Old fields, road/fence/ditch side
Winged/Shining Sumac berries	Beverage	Ditch banks/edges of clearings
Wild strawberry, Mulberries, Blackberries	Berry	Field edges/meadows
Highbush blueberries	Berry	Acidic forests, swamps, and bogs in middle/high elevations
Black cherries	Berry	Wet to dry forests, fence edges, & old fields
Common Elderberries	Berry	Damp to wet soils in clearings/field edges and floodplains
Pawpaw	Berry	Well-drained floodplain forests & occ. dry uplands
Wild raisins and Black Gum Berries	Berry	Swamps and small streams/ ponds
Passionflower/ Maypop	Berry	Fence/road sides, old fields, edges of forest
Common Hackberry	Berry	Floodplain forests, upland forests, & old fields
Partridgeberry	Berry	Dry forests
Maple and Hickory Sap	Sweetener	Forest/Upland Forest

Table 3. Ethnobotanicals listed in the Traditional Cultural Properties (TCP) study (Source: Bragdon et al. 1999).

In consultation with the tribes, five TCPs were identified, some of which are quite broad and reflect the diversity of landscapes used historically and contemporaneously by the three tribes. These TCPs include

1) the Pamunkey River; 2) the Mattaponi River; 3) the Pamunkey Reservation; 4) the Mattaponi Reservation; and 5) all archaeological sites considered eligible for the National Register of Historic Places.

The Pamunkey River and its associated wetlands and uplands (with no discernible limit) were identified as a TCP because of the diversity of landscapes used by native people in the past and present, including as traditional food resources. In particular, the Pamunkey shad hatchery, which would have been adversely impacted by the proposed reservoir project, is dependent on the health of the river.

The Mattaponi River and its associated wetlands were identified as a TCP for the same reasons as the Pamunkey. The Mattaponi River was also included because of the many communities along its banks in the seventeenth century. The river itself is symbolic to Native identity for both the Mattaponi and the Upper Mattaponi and is described as the lifeblood of the Mattaponi Reservation.

The Pamunkey and Mattaponi reservations are clearly very important places to those tribes. The Pamunkey Reservation is recognized as a National Historic Landmark and is the center of cultural and social life for the Pamunkey with a number of historically and culturally significant structures and archaeological sites located within its borders. The Mattaponi Reservation is also the center of contemporary Mattaponi life with numerous historic places, including a church, museum, fishing shanties, school, and archaeological sites. The shad hatcheries on both reservations are also an integral part of community life.

All National Register-eligible archaeological sites were included as contributing resources to a broader TCP. One of the many reasons the tribes argued the reservoir project should not go forward concerned the adverse effects on archaeological resources. The tribes did not want archaeological resources disturbed in any way by the project. A total of 72 National Register-eligible sites were identified as part of the preparation and survey work ahead of the proposed reservoir project. There was disagreement, however, about whether to preserve these sites or study them further.

The importance of the riverine environment historically and in the present was an important theme of the TCP study. Martin Gallivan, an archaeologist based at the College of William and Mary, examined the broader archaeological landscape beyond the focus of the reservoir project. Gallivan focused on the conditions that led to increasing political complexity reflected in the rise of Wahunsenacawh's (Powhatan) power as mamanatowick (chief of chiefs). Gallivan's work was informed through collaboration with the Pamunkey and Mattaponi as well as the Chickahominy, Rappahannock, and Nansemond tribes. Like Gatschet before him, Gallivan considered the place names, both historical and contemporary, attached to the landscape. When translated, the majority of these place names refer to the interaction of different water landscapes with a riverine perspective or "waterscape" (Gallivan 2016:67). Other place names had ritual significance, such as Werowocomoco, or "place of the antler wearer" – antler wearers denoting people of priestly status (Gallivan 2016:141). Gallivan argues that the name signifies a place where elders and priests would gather. By choosing this site as his capital and naming it Werowocomoco, Wahunsenacawh was solidifying both political and religious dominance over the tributary towns within his polity. Gallivan's findings will be discussed further in Chapters III and IV.

CHAPTER III
NATIVE PEOPLES OF THE PAMUNKEY, MATTAPONI, AND YORK: A HISTORY

CHAPTER HIGHLIGHTS

- This chapter acknowledges that Native history "spans thousands of years, not hundreds" by beginning with the arrival of the first people in the York River valley 12,000 years ago.
- As the Native population in the York valley adapted to warming temperatures beginning ca. 8000 BCE, they became expert foragers and hunters.
- Pottery making in the York valley began ca. 1200 BCE.
- Beginning about 200 CE, the first Algonquians migrated into the York valley, probably from the Northeast.
- Corn arrives from Mexico ca. 900-1000 CE along established trade routes, population increases, and towns soon emerge.
- The Powhatan chiefdom[2] forms in the late sixteenth century with Wahunsenacawh (or Powhatan) as its leader.
- The Tassantasses (strangers) arrive permanently in 1607.
- Despite a history of relentless displacement from 1607 on, the native groups in the York and James river valleys maintain familiar practices, rituals, and traditions.
- Beginning at the end of the eighteenth century and continuing through the present, members of the three tribes adapt to the market economy through fishing, hunting, and ceramic manufacture.
- At the end of the nineteenth and beginning of the twentieth centuries, many tribal members moved to urban locations in search of opportunity while maintaining strong ties to the reservation or, in the case of the Upper Mattaponi, the community.
- The right to self-identify as Indian, under challenge through most of the eighteenth and nineteenth centuries, is, in the first quarter of the twentieth century, legally denied.

The ancestors of the Pamunkey, Mattaponi, and Upper Mattaponi tribes were part of the Powhatan chiefdom greeting the colonists who arrived, permanently as it turned out, to their country in May 1607. Their roles at that point in American history have been memorialized in documents surviving from that period, including the Map of Virginia prepared by John Smith (published in 1612). The Smith map and other documents, biased as they are, provide important information about an extensive network of native communities and nations.[3] In particular, the Smith map reveals the densely settled, entirely Native world into which the settlers had inserted themselves. Communities like those represented on the Smith map and described in his accompanying journal presuppose a history with deep roots.

This chapter summarizes the history of the three tribes, drawing on archaeological, documentary, and secondary sources. Acknowledging criticism that many histories of Native people often overlook the

[2] The term, chiefdom, is understood as a political structure typically led by a hereditary chief ruling by power of persuasion and occasionally force. Chiefdoms, which are characterized by inequality, lack standing armies or police forces. The term, however, has been criticized because of the extensive variability among so-called chiefdoms through time and space (Pauketat 2007).

[3] The term, nation, is used here to describe the indigenous political groups Europeans encountered as they began their occupation of the Middle Atlantic; the term was also used by the colonists in recognition of Native sovereignty.

antiquity of Indian people in North America, this chapter begins with this deep history.[4] In addition to the use of primary and secondary sources, when historical evidence specific to the three tribes is lacking, the chapter draws on findings from neighboring groups and polities in the region to make informed inferences about historic Pamunkey, Mattaponi, and Upper Mattaponi lifeways and practices.

For those who would like to explore Pamunkey, Mattaponi, and Upper Mattaponi history further, refer to this report's sources in References Cited.

Great Hare: An Algonquian Creation Story

In 1610, a Patawomack weroance [chief] related the story of Great Hare to Virginia colonist Henry Spelman, an English boy about the age of 14.[5] Spelman later related the story to William Strachey, who published it in 1612. The Patawomack weroance, Iopassus, had described to Spelman a god in the form of a Great Hare who had created human beings, keeping them in a bag with him in the spirit world. Certain jealous spirits, however, were attempting to destroy Great Hare's work. To protect his creations, Great Hare "made the water and the fish therein and the land" for them, creating the material world for humans. He populated this new land with his creations and with deer. Great Hare then withdrew from the world he had created, leaving behind the men and women. When the men and women would die, they would return to Great Hare's world, where they would stay a while, dancing, singing, and feasting, until (through reincarnation) they would come into the mortal world again.

The story Iopassus related was heard imperfectly by Spelman, who didn't want to interrupt the weroance as he told the story. Nonetheless, what survives is a Native creation story, a story that would have infused every aspect of Patawomack life. While the Patawomack lived on the Potomac River separate and apart from the Pamunkey, Mattaponi, and other York River groups, the story of Great Hare – one that parallels creation stories elsewhere – was no doubt recognized and probably told by the York River groups.

Historian Edward Ragan (2006:30, 33) suggests that the story of Great Hare as an origin story is more than just myth, revealing memories of "environmental and social changes among ancient peoples." "The legend of Great Hare," he argues, is "located in the most recent glacial retreat," an event taking place some 10,000 years ago. One of the story's elements refers to the slaying of a "Great Deare" whose hairs were then transformed into many deer. Environmental changes, beginning as the Pleistocene gave way to the Holocene,[6] brought warming temperatures, the disappearance of megafauna (perhaps the "Great Deare"), and the appearance of solitary, forest-dwelling deer.[7]

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[4] In 2008, anthropologist and archaeologist Ashley Spivey, also a member of the Pamunkey Indian Tribe, interviewed Pamunkey members about the tribe's history. Spivey (2017:1) found "an adamant recognition that our history spans thousands of years, not hundreds."

[5] The Patawomack weroance had seen a picture of the Christian creation in an English Bible and had offered his countrymen's version.

[6] The Pleistocene and the Holocene are geological time periods. The Pleistocene began some 2.5 million years ago and ended about 10,000 years ago. It is the period when modern humans first appeared. The Holocene, which followed the Pleistocene, was characterized by warming temperatures and changing plant and animal communities. Although the Holocene is now ongoing, many scientists are considering whether or not the planet has entered what is termed the Anthropocene.

[7] In his study of the history of the Rappahannock Indian tribe, Ragan (2006:27-33) described the story of Great Hare, including a thoughtful discussion about how the Algonquian creation story was incorporated into the living worlds of indigenous Chesapeake cultures. These paragraphs draw on Ragan's work.

An Archaeological Creation Story

In another origin story, this one based on archaeological evidence, archaeologist Richard J. Dent (2007) observed that the first humans arrived in the Chesapeake region some 14,000 to 15,000 years ago when temperatures were considerably cooler and sea levels significantly lower than today. The earliest settlements in the region are relatively rare, with only a few known in the area between the James and Potomac river valleys. Instead, most of the earliest arrivals to the Chesapeake region lived south of the James, primarily along the Nottoway River.[8] Glacial ice reached into southern Pennsylvania and the Chesapeake Bay had not yet formed. The rich marshes that now characterize the waterways of the York and Rappahannock river valleys were still far off in the future. Instead, the region consisted of a boreal forest, or a forest characterized primarily by cool weather conifers, including pines and spruces. Overall, the boreal forests with their easily depleted resources may have required a territory of about 62 by 62 miles for groups of nuclear or extended families to insure adequate food supplies.

A warming climate beginning about 10,000 years ago (what geologists describe as the beginning of the Holocene and what Ragan [2006:35] thinks Iopassa may have recalled as the time of the disappearance of the "Great Deare") set in motion conditions that would eventually make the York River valley a rich and plentiful land. As global temperatures warmed and Pleistocene or Ice Age plants and animals gave way to new plant and animal communities, the boreal or conifer forests of the late Pleistocene were gradually replaced by a deciduous forest of oak and hickory. Deer, which had been available even when temperatures were significantly cooler, adapted well to the warming conditions.

Although rare, finds of artifacts predating 8000 BCE in the York River valley indicate that people were in the valley even when it was less hospitable for human habitation. The York, Pamunkey, and Mattaponi rivers were much smaller feeder streams and tributaries that did not assume their modern forms until around 3000 BCE. As temperatures warmed, however, people already living in the river valley could support larger populations and more people from elsewhere began moving there. In 1975, E. Randolph Turner (1976), then a Ph.D. student at Pennsylvania State University, found evidence for this movement when he undertook a survey of five Virginia counties, including for the purposes of this report, King and Queen and Gloucester counties. Turner recovered 4,584 artifacts from 50 archaeological sites in King and Queen County and 577 artifacts from thirteen sites in Gloucester County.

Turner found that the numbers of datable projectile points increased in quantity through time, a rough proxy for a growing number of people between 7400 and 6500 BCE. These early families appear to have adjusted well given that dozens of projectile points dating between 6500 and 1200 BCE were also recovered as part of the survey. By contrast, Turner found no projectile points dating between 13000 and 2500 BCE in Gloucester County, east of King and Queen County. A more recent survey of the Ripley property, located on the north bank of the York River in Gloucester County and including Werowocomoco, did yield projectile points dating as early as 10,000 years ago, but only in trace amounts. Instead, the majority of the points "are quartzite triangles diagnostic of [the period 200 BCE-1600 CE]" (Gallivan et al. 2006:39).

A survey of the Naval Weapons Station-Yorktown, located on the south bank of the York River in York County and directly across from Gloucester County, covered 6,000 acres and resulted "in the most comprehensive database of settlement patterns in Tidewater Virginia" (Gallivan 2016:74). More than 240 archaeological sites were found on the naval facility, including some dating as early as 14,000 years ago. However, "sites with components predating 500 BCE are not common" and include only six sites, four of which date between 3000 and 1200 BCE (Underwood et al. 2003:373). The archaeologists in charge of the

[8] The Nottoway River originates in Virginia and drains into the Chowan River and ultimately Albemarle Sound in North Carolina.

survey argued that shovel test sampling – a standard strategy used to identify sites – probably underrepresents lithic sites (or sites yielding only stone artifacts) because, with the exception of projectile points, most stone artifacts are not temporally diagnostic (Underwood et al. 2003:374).[9]

While all of these observations are based on an admittedly limited sample of the archaeological record, they do indicate that, as temperatures warmed and the population grew in the York River valley, people appear to have come from the west. People already living here flourished and the families and extended families either already in or moving into the York valley – more specifically, the Pamunkey and Mattaponi valleys – made their living as foragers and hunters. Not only had the warming climate increased the carrying capacity of local environments, resources were becoming more predictable. This predictability is evident in the repeated occupations of large and semi-permanent residential camps in river and stream valleys, with these camps linked to smaller, short-term camps, probably for hunting in upland locations (Dent 2007).

No archaeological sites from the period 6500 through 1200 BCE have been excavated in the York River valley and a core taken at the Naval Weapons Station Yorktown yielded surprisingly little pollen for its earliest context, or 2500-1200 BCE (Gallivan 2016:88). Instead, excavations elsewhere have yielded evidence that is suggestive of both conditions and lifeways at this time in the Chesapeake Coastal Plain and probably the York valley as well. Paleobotanical evidence (or ancient plant remains) recovered from the Indian Creek V Site, for example, a camp site located along an upland stream tributary of the Potomac River in what is today Prince George's County, Maryland, suggests the wide range of plant resources people were making use of during these millennia (LeeDecker and Koldehoff 1991).

Surprisingly, of the hundreds of spores, seeds, and pollen grains recovered from the Indian Creek V Site, sunflower, marsh elder, little barley, and goosefoot (Chenopodium) – some of the most important plant materials in use at the time – are missing from the archaeological record.[10] Thirty other species are, however, present at Indian Creek V. Of these 30 species, fern, sumac, pennyroyal, watershield, and copperleaf constitute the largest samples of charred plant material recovered. Four of these plants – fern, sumac, pennyroyal, and watershield – are both edible and have medicinal properties.

The prevalence of fern macrospores at Indian Creek V has been interpreted as part of a practice of lining cooking pits with this plant. Fern residue was also identified on stone cutting tools at the site, suggesting fern was intentionally collected for this practice. Sumac is also well-known among Native groups as a beverage ingredient and as a smoking material. Pennyroyal can be used to treat headache, stomachache, and wounds. Watershield is an astringent useful for the treatment of abscesses. Copperleaf, however, is poisonous, inedible, and has no known uses, so its presence at the Indian Creek V Site is a bit of a mystery. Other charred plant remains found in smaller numbers include burreed (food), water lily (food and medicinal), chufa (food), and geranium (medicinal).

Almost no animal bone remains were recovered from the Indian Creek V Site, a result the archaeologists attribute to soil acidity. Animal bones recovered from the Plum Nelly Site, a fall-winter base camp on the south side of the Potomac River occupied about 2500 BCE, included deer, beaver, raccoon, and opossum as the major meat staples (Potter 1982). Lesser contributing species included oysters, soft-

[9] Shovel testing is a strategy used by archaeologists to find sites and consists of pits one foot in diameter excavated every 25 to 50 feet.

[10] While sunflower, marsh elder, and little barley were not recovered in any form from the Indian Creek V site, goosefoot or Chenopodium was recovered in an uncharred condition. In keeping with archaeological practice, however, LeeDecker and Koldehoff (1991:242-255) considered only charred specimens in their interpretation. A charred seed or macrospore suggests intentional use in the past; an uncharred seed or macrospore could have conceivably entered the archaeological record through non-cultural processes.

shell clams, mussels, box turtle, passenger pigeon, gray fox, dog, gray squirrel, fox squirrel, and cottontail. At the White Oak Point Site, also on the south side of the Potomac, residents after about 2500 BCE consumed oyster and venison along with, in smaller amounts, soft shell clam, gulf periwinkle, mussel, and other species. Hickory nuts and acorns were also recovered from White Oak Point (Waselkov 1982).

The Indian Creek V, Plum Nelly, and White Oak Point sites are located in different environments and, not surprisingly, yielded different findings. Although this variation is no doubt linked to issues of preservation, it is also possible the differences suggest the importance of a seasonal round based in the landscape. The diversity of resources recovered from these sites reflects what Dent (2007:188) has described as an "intensification" effort through time or a growing emphasis on the harvest and use of certain wild species. While the plant remains seen at the three sites are not those that become domesticated, they reflect the extensive use of wild plant resources through this period.

Notably, plant domestication was not something an individual or community set out to do; instead, plant domestication reflects long-term human use of certain wild plants whose genetic structures made them susceptible to the changes that propelled a plant to produce a larger seed or leaf of value to humans. By 3000 BCE, sunflower, which had been domesticated in the American Southwest, was in the East. Goosefoot (Chenopodium) and little barley were domesticated by 1200 BCE. Corn – the crop most often associated with Native Americans – did not arrive in the York River valley until ca. 1000 CE.[11] Corn, domesticated in Mexico from the wild grass, teosinte, arrived in the region through long-standing and well-established trade routes.

The worldwide impact and significance of plant domestication should not be underestimated: domesticated plants and animals allowed the production of food surpluses that underpinned the development of social and political complexity. The ability to produce food surpluses contributed to population increase, divisions of labor including individuals not involved directly in the production of food, and the appearance of densely populated town settlements in the Chesapeake coastal plain.

The Beginning of the Native Ceramic Tradition

The appearance in the archaeological record of ceramics ca. 1200 BCE – the beginning of a tradition practiced in the York valley into the twentieth and twenty-first centuries – signals an important cultural shift. Ceramics are generally – although not perfectly – correlated with horticultural and agricultural economies as domesticated plants provided higher yields and generated food surpluses. The surpluses created by domesticated plants required places for food storage, including in below-ground storage pits and ceramic pots. These surpluses in turn required rules for the redistribution of food. In the Middle Atlantic, marsh elder, goosefoot, and little barley were used by Native people as wild resources beginning some 5,000 years ago. By 250 BCE, seed crops were becoming the focus of cultivation. A 250-square-foot plot of marsh elder and Chenopodium (goosefoot), for example, could yield half the caloric requirements of a household of ten for six months (Anonymous 1993:3). Hunting and foraging remained an important part of horticultural economies well into the twentieth and twenty-first centuries.

This is also the period – 380 BCE to 445 CE – when hand-to-hand exchange becomes clearly evident in the archaeological record. For example, the Delmarva Adena phenomenon represents the trade of unusual, even exotic materials originating in the Ohio valley into the Tidewater. These items were used in elaborate Tidewater mortuary rituals involving secondary burials presumably of the most elite individuals. Adena artifacts likely traveled along trade networks, although some researchers have raised the less likely possibility of migrants from the Ohio valley with ties to Adena ceremonialism coming into the

[11] Stephen Potter (1993) argues that corn shows up in the Potomac valley ca. 900 CE.

Chesapeake. While Adena artifacts have been reported for Maryland and Delaware, far fewer Adena artifacts have been reported for Virginia and none in the greater York River valley (Wise 1973; Ford 1976).

A second "exotic" import includes what archaeologists call Abbott zoned-incised ceramics, distinctively decorated ceramics associated with archaeological sites in New Jersey and other sites in the northeastern United States. These ceramics have been found in the James River Valley at Maycock's Point and have been interpreted as vessels used "on special occasions when seasonal fish runs brought together different bands for seasonal aggregations" (Gallivan 2011, 2016:93-98; Stewart 2004). No Abbot zoned-incised ceramics have yet been found in the York or Rappahannock river valleys.

The earliest ceramics recovered from the York drainage include Croaker Landing Ware (1490-800 BCE), Varina Ware (1200 BCE), Marcey Creek Ware (1200-600 BCE), Selden Island Ware (1000-500 BCE), and Popes Creek Ware (500 BCE-300 CE). Both Marcey Creek and Selden Island wares are tempered[12] with crushed steatite and are a widely recognized type found throughout the Delaware, Maryland, and Virginia Coastal Plain. Croaker Landing Ware, perhaps the earliest dated ceramic known for Virginia, appears restricted to the York and James river valleys. Croaker Landing Ware has a clay or "grog" temper. Varina Ware, a sand-tempered ceramic, is distinguished by net impressions in the vessel's clay walls (Gallivan 2016:72). Popes Creek wares have also been reported from the lower York valley. Gallivan (2016:75) notes that Popes Creek and Varina ware types are similar in temper (sand) and surface treatment (net-impressed).

Mockley Ceramics and the Arrival of Algonquians in the Virginia Coastal Plain

The sudden ca. 200 CE appearance and relatively rapid spread throughout the Virginia and Maryland Coastal Plain of a distinctive, shell-tempered ceramic known as Mockley Ware has led archaeologists to suggest population movements from the Great Lakes to New England, and then south along the Atlantic coast. While it may seem strange that such an interpretation could be read out of ceramic fragments, in fact, ceramic manufacture required skills mothers passed onto their daughters with ceramic traditions not changed simply for the sake of change. The dates and distributions of Mockley ceramics suggest an introduction from the east, a contrast with what happened ca. 6,000 years ago, when population movements appear to have come from the west. It was with these newcomers and their shell-tempered ceramic tradition that the Algonquian language is thought to have arrived in the Chesapeake and greater Middle Atlantic. The details of these movements are not well understood, raising questions about interactions between the newcomers and the existing communities.

The archaeological work by Martin Gallivan and his colleagues, including Ashley Atkins Spivey, E. Randolph Turner, and David Brown, at Werowocomoco and Gallivan's work at Kiskiak have provided some of the best information about Algonquian history in the York River valley. Werowocomoco is well-known as the settlement where Wahunsenacawh, or Powhatan, lived at the time of the arrival of the colonists at Jamestown. Kiskiak, located on the south bank of the York River in York County, was a major settlement beginning ca. 200 CE and later became a part of the Powhatan chiefdom. Gallivan's reanalysis of pollen data from the Indian Fall Creek Site on the Naval Weapons Station Yorktown (near Kiskiak) indicated that, between 500 BCE and 200 CE, a dense forest cover existed in the immediate vicinity. By 200 CE, in concert with the appearance of Mockley ceramics, the pollen reveals species associated with the clearing of forests, presumably for larger settlements. A growing population at Kiskiak during this period is also suggested by the decline in the size of oyster shells, suggesting human pressure on the oyster population (Gallivan 2016).

[12] Temper refers to the intentional addition of material to clay to make it workable and to fire more evenly and with less breakage.

As suggested by the archaeological evidence recovered from Werowocomoco and Kiskiak as well as from other sites in the Virginia Coastal Plain, the arrival of Algonquian migrants ca. 200 CE not only brought new kinds of ceramics but reflected a "shift in settlement focus toward estuarine [and riverine] settings" (Gallivan 2016:76). The corresponding widespread appearance of Mockley ceramics and their persistence for centuries as well as linguistic analysis "signaled the introduction of loosely bounded learning networks and social interaction across a range of communities in the region" (Gallivan 2016:102). At the same time that Mockley ceramics predominated at Kiskiak, however, they intriguingly remained a minority ware in the nearby Chickahominy River.[13] This was, according to Gallivan, "a new mode of dwelling in the Chesapeake," with individuals participating in multiple communities at the local and regional scales.

Gallivan (2016:70-71) does not believe that these newcomers displaced or replaced existing groups but rather experienced some form of coexistence. Mixed assemblages of Varina and Mockley ceramic fragments, Gallivan argues, support some kind of interaction, or what he describes as "a cultural landscape composed of overlapping social networks." Gallivan implies that the makers and users of Varina and Mockley ceramics, at least initially, both occupied the James-York peninsula, coming together for ritual or feasting ceremonies, including ceremonies associated with seasonal fish runs.

The arrival of corn in the Middle Atlantic ca. 1000 CE corresponds with and may have spurred yet another shift in the Native landscape, one seen throughout the Chesapeake. Large residential communities characterized by a growing number of houses per settlement, decreased spacing between houses, internal storage pits for food surpluses, a greater range in the size of structures, and the appearance of communal architecture and public facilities suggest a developing political complexity grounded in the rise of social and political inequality. Communal buildings housed feasts, councils, accumulated wealth, and, temporarily, the bones of ancestors (Gallivan 2003:86 102-103, 105, 114-115, 120). Gallivan argues that this pattern reveals the increasing control of surplus produced by individual households along with the emergence of towns. Stylistic patterning evident in ceramics may also indicate familial and social boundaries. Exotic artifacts, often a symbol of social stratification, was limited, which Gallivan (2003:159) interprets as evidence that the political economy emphasized food production over wealth accumulated through trade.[14]

Beginning at the turn of the sixteenth century, pit features (facilities for storing surplus corn) began to disappear from the archaeological record (Gallivan 2003:109). Stephen Potter (1993:170-173) has suggested that this pattern, which he observed at the Potomac Creek Site on the south side of the Potomac River in what is now Stafford County, Virginia, may reflect "the presence of a chief who controlled surplus food in aboveground corn cribs." Ossuary features, or communal graves where the deceased would be interred in ritual ceremonies, were increasingly used in the Coastal Plain, with many burial places being reused, perhaps in part as a way to center the landscape in time.

Arrival of the Tassantasses

The onset of European exploration beginning in the late fifteenth century brought Native people in North America into contact with Europeans in the sixteenth century, although the majority of European settlement through the end of the sixteenth century was in Mexico, the Caribbean, and Florida (Gallivan 2003:95-96, 124-125). The arrival of English settlers to Tsenacomacoh in 1607 – people the Algonquians called Tassantasses, or strangers – was probably not as momentous for the people living along the York and James rivers as it was for the strangers. The Native people had already had some interaction with English settlers at Roanoke (in what is now North Carolina) and, before that, Spanish explorers and Jesuits in Chesapeake Bay. In 1560, a party of Spanish explorers had visited the Chesapeake and taken a Powhatan

[13] The Chickahominy River drains into the James River.
[14] Shell bead production did take place at Kiskiak; see Shephard (2017).

boy, Paquiquino, also known as Don Luís de Velasco.[15] Paquiquino, who stayed with the Spaniards for a decade, was taken to Mexico and ultimately to Spain before he was returned to the Chesapeake in 1570. On that return trip, Paquiquino was traveling with Spanish Jesuits hoping to establish a mission on the York River. Instead, Paquiquino abandoned the Jesuits who were later killed by the Indians, perhaps those living at Werowocomoco. A retaliatory expedition by Spain in 1572 resulted in the death of 20 Native people.[16]

The English at Roanoke fared no better in their dealings with the Native residents. In one infamous act, the settlers, believing an Aquascogoe Indian had stolen a silver cup, burned the entire town. While a later governor attempted better relations, the damage had been done. Sickness as well as omens in the form of an eclipse and a comet probably exacerbated Algonquian fears of the visitors' motives. All in all, by 1607, the people in the lower York and James river valleys could not have been surprised to see yet another shipload of strangers who didn't hesitate to use violence to get their way while violating Native norms. Still, the elite leaders of the Powhatan chiefdom remained interested in the trade potential offered by the strangers. To access that trade, Wahunsenacawh or Powhatan attempted to control the strangers in their choice of Jamestown for their settlement – a low-lying, marshy, and limited spot that, in many ways, was no choice at all (Egloff and Woodward. 1992: 47-48; Quinn 1977: 239; Lewis and Loomie 1953: 38, 89-92, 107-109, 118-121, 133-137).

Wahunsenacawh had been born ca. 1550 at Powhatan, a town located on the north bank of the James River just below the falls near present-day Richmond. Following matrilineal rules of succession, Wahunsenacawh was probably the nephew of the weroance of his natal town. By the time the English had arrived at Jamestown, initiating a documentary record of Wahunsenacawh's achievements, Wahunsenacawh had forged an alliance of as many as 32 towns, including Powhatan, Appamatuck, and Arrohateck (on the James) and the Pamunkey, Mattaponi, and Youghtanund (on the York). Wahunsenacawh's political authority, at least through English eyes, was seemingly absolute, in part because of the alliances he created through marriage and, when necessary, warfare. Wahunsenacawh's power was not just political; he was also considered a powerful priest (Huber 2015).

The power Wahunsenacawh appeared to wield led John Smith to mistakenly conclude that his authority extended as far north as Moyaone, or the major Piscataway town on the north shore of the Potomac. Archaeologists and historians later concluded Wahunsenacawh's authority extended no farther than the south shore of the Potomac River, although archaeologist Larry Moore (1993) challenged this conclusion on the basis of ceramic distribution: ceramic types known for the Potomac valley are rare in the James and York valleys, a trend that seems unusual for an alleged tributary group. More recently, Strickland et al. (2016) have questioned the notion that Wahunsenacawh's authority reached even the Rappahannock River. Indian towns located almost exclusively on the north bank of the Rappahannock River had previously been interpreted as an effort to resist the Powhatans' expansion. A recent analysis has suggested that the forces driving settlement on the Rappahannock's north bank were primarily resource-based and not political; that is, not in retreat from Powhatan.

Powhatan's mantle – a deerskin cloak or hanging preserved in the Ashmolean Museum in Oxford, England – has been interpreted as an indigenous map of Wahunsenacawh's territory and probably represents the mamanatowick's (chief of chiefs) extent of authority more accurately (Figure 8).[17] Thirty-four circles and a human and two animal figures made from carefully shaped shell beads sewn onto the

[15] Gallivan (2016:79) suggests that Paquiquino may have been from Kiskiak.

[16] Archaeologist Seth Mallios (2006) has argued that the Jesuits at this settlement named Ajacán, in their zeal to convert Native people, unknowingly violated indigenous rules of exchange, trading with outsider groups but not with those they were trying to convert.

[17] According to curators at the Ashmolean Museum, the deerskin mantle may have been a hanging rather than a mantle or cloak.

Figure 8. Powhatan's Mantle (Ashmolean Museum of Oxford).

deerskin resemble maps made throughout Native North America, with the circles likely representing districts under Wahunsenacawh's control (Turner 1976:176; Waselkov 2006).

How Wahunsenacawh managed to consolidate power in the York and James river valleys remains a matter of discussion among archaeologists and historians. Gallivan (2003:160) described the emergence of an *individual*-focused political authority within "a cultural context that emphasized *corporate* symbols" (emphasis added). A number of researchers have linked this emergence with the arrival of European explorers in the sixteenth century, with trade, depopulation from disease, or both forcing changes in social relations. Still others point to the "threat" posed by the Monacans, or Native groups in the James River valley west of the fall line, who the Virginia Algonquians seemed to universally distrust (for a brief review of these theories, see Gallivan [2016]:26-27).[18]

Tree-ring data from bald cypress trees along the Nottoway and Blackwater rivers and from near Jamestown Island revealed that a severe drought gripped the Virginia Tidewater from 1587 until 1589 and again from 1606 until 1612: the driest periods in 750 years. Drought conditions created a crisis for Native communities made worse by the demands of the hapless settlers at Jamestown (Stahl et al. 1998:566). That there was a shortage of food was confirmed when Smith, who, venturing into the territories of the Pamunkey and Mattaponi demanding corn, reported that "the people imparted that little they had, with such complaints and teares from the eyes of women and children," that anyone would have been moved (Barbour 1986:II:205). The droughts may have also contributed to a challenging environment that required the rise of a powerful leader.

Werowocomoco

Whatever the precipitating factors for the forging and expansion of the Powhatan chiefdom, by the early seventeenth century, Wahunsenacawh was viewed as a powerful political and religious leader who made his principal residence at Werowocomoco on the York River. He served as a "culture broker" mediating between his countrymen and the newcomers, and Werowocomoco became an important setting for some of the better-known events following the settlement of Jamestown.

Werowocomoco, located on Purtan Bay on the north side of the York River, has yielded "evidence of brief occupations stretching back" 10,000 years but it was not until late in Native history (post-1200 CE) that the settlement emerged as an important place in Algonquian country. It was at about this time that "residents cleared forests in the area, planted gardens, erected houses along the river, and created a small trench enclosure in the interior of the site" (Gallivan 2016:144). Similar practices in place-building were occurring throughout the James and York river valley coastal plain. By the turn of the seventeenth century, Werowocomoco had become "a prominent town" with a "history of monumental landscape features" as more and larger trenches were excavated. A "remarkably long and wide" Native dwelling was uncovered in association with at least three of these trenches, perhaps associated with Wahunsenacawh himself (Gallivan 2016:160).[19]

Was Werowocomoco unusual as Native towns went in the late sixteenth and seventeenth centuries and, if so, what made it unique? Why did Powhatan, who was born at a town on the James River below the falls, choose Werowocomoco as his seat? These are important questions to pose even if the evidence to

[18] Native susceptibility to European germs and viruses was real, but the model that argues for a sweeping and uniform depopulation due to disease is not always borne out by archaeological evidence. Bioanthropologist Douglas H. Ubelaker (1974) found, for example, that populations in the Potomac River drainage may have actually been increasing at the end of the sixteenth century.

[19] European copper fragments believed to be from James Fort were also found in this vicinity, suggesting an elite residence.

answer them remains (at this time) relatively thin. It is important to develop the context in which a settlement such as Werowocomoco flourished.

Trench features like those at Werowocomoco have been identified at other towns, including Kiskiak on the York River (roughly across from Werowocomoco), the Wilcox Neck, Buck Farm, and the Old Neck sites on the Chickahominy River, and the Potomac Creek and Moyaone sites on the Potomac River (Gallivan 2016:165). These "earthworks," then, are not especially unusual at certain types of sites, although their construction, using "digging sticks, bone or stone hoes, and baskets … to move excavated soil" (Gallivan 2016:157) would have required considerable, and probably compelled, labor. Wahunsenacawh also used these features and their placement in the landscape to affect lines of sight as a statement of his presence and his power.

Werowocomoco had been a "persistent place for centuries," so its political and religious power is clear. Werowocomoco was the seat from which Wahunsenacawh would direct his countrymen's interactions with the strangers, and where he would ritually incorporate Smith into the Powhatan polity, the latter event cementing Werowocomoco's place in the American historical imagination. How Werowocomoco related to other places, however, will require additional archaeological research at the many other towns located in the York River valley. Anthropologist Margaret Huber (2015) has also suggested that Wahunsenacawh maintained a house in all of his subject territories and temples at other places, such as at Uttamussack on the Pamunkey River. The identification and documentation of these places will serve to develop the greater landscape of which Werowocomoco was a part.

Smith's narrative of captivity provides important insight into both life and landscape in Powhatan country after the initial arrival of the colonists. In December 1607, Smith and a small group of men were on a foraging expedition at the head of the Chickahominy River, a tributary of the larger James, when Smith was apprehended by Opechancanough, Wahunsenacawh's brother.[20] Opechancanough marched Smith overland, first to Orapaks (on the Chickahominy River), then to the Youghtanunds (Pamunkeys), the Mattapanients (Mattaponi), the Payankatanks (Piankatanks), next onto towns on the south bank of the Rappahannock, and, ultimately, to Werowocomoco, where Smith underwent what may have been an adoption ceremony involving Pocahontas. The march is memorialized in a map believed to have been copied from Smith's notes by a Spanish spy at Jamestown (Figure 9) (Barbour 1986:I:45-55; II:146-147, 149-152; Haile 1998:179-163, 166, 239).[21]

During Smith's procession across the Middle Peninsula, the prisoner witnessed a divination ceremony, although the place where this ceremony took place is unclear. Historian Edward Ragan (2006:90-91) identified the location as the first stop after Orapaks, or Rasawrack, "a temporary village used for winter hunts" in the Piedmont. Archaeologist Martin Gallivan (2016:4) concluded the place was at Opechancanough's town in Pamunkey Neck, or much closer to present-day West Point. Wherever the

[20] Opechancanough's relationship to Wahunsunacock is complicated by Robert Beverley's contention that Opechancanough was "a Prince of a Foreign Nation," possibly from Mexico. Perhaps Opechancanough was Paquinquino, the Powhatan boy taken by the Spaniards ca. 1560. Alice Kehoe (2005) has suggested the name, Powhatan, derives from the Maya Pahuatan. For a review of these theories, see Rountree (2005) and Gallivan (2016:79-80). It is important to note that the hunting party that nabbed Smith consisted of (according to Smith) 200 men, including Chickahominy and other hunters from Paspahegh, Youghtanund, Pamunkey, Mattaponi, and Kiskiak, suggesting the sometimes fluid nature of political divisions (Ragan 2006:89-90).

[21] For interpretations of the adoption ceremony, which involved Smith claiming he was "rescued" by Wahunsunacock's daughter, Pocahontas, see Gallivan (2016:171-172) and Lemay (1992). For the place of Pocahontas in the American imagination, see Tilton (1994).

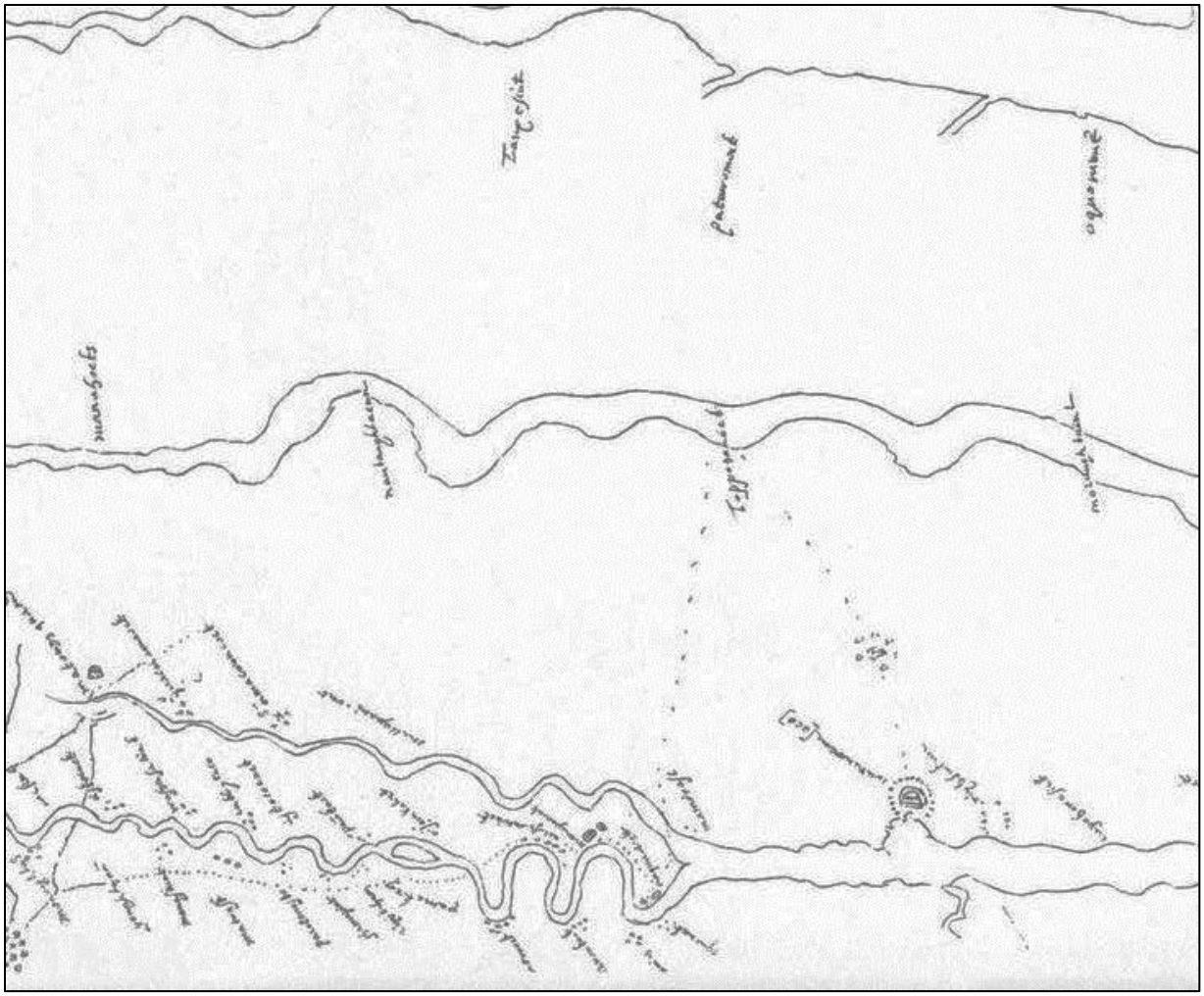

Figure 9. The Zúñiga map, 1608; the dotted line depicts the route Smith was taken by Opechancanough.

ceremony took place, the priests used corn meal, corn kernels, and twigs to represent the world, including the known Algonquian world and the world of the Tassantasses as it related to Tsenacomacoh. Ragan (2006:92) argued that it is with this ceremony that the process of Smith's adoption into Powhatan's world had begun. This makes the march of Smith more than just a parade to show off the stranger but as a way of marking territory, time, and political authority, a practice not at all unfamiliar in Europe with practices such as "beatings of the bounds" and royal processions (Einonen 2011:124-151).

Opechancanough led his prisoner to Toppohannock on the south side of the Rappahannock River. There, the Rappahannock examined Smith to determine if he was the Englishman who had, in 1603, visited them and killed their leader. Smith was identified as too short to have been the culprit. On the way to Werowocomoco from Toppohannock, Opechancanough marched his prisoner across the head of the Piankatank River. The Natives encountered there were remnants of the Kecoughtan Indians, who Powhatan had recently driven from their town on the north side of the James River's mouth, replacing them with some of his own people. When Smith later sailed up the Piankatank River, he indicated that their village was on the upper side of the Piankatank River (Barbour 1986:I:175; II:178).

Once at Werowocomoco, Smith later recounted, he was threatened with death at the hand of Wahunsenacawh only to be "rescued" by Pocahontas. The story gained currency in early nineteenth-century America and, by the twentieth century, historians were debating whether the "rescue" – or some event – had even taken place. Helen Rountree (1989) does not deny that Smith experienced a Powhatan adoption event of some kind but, even if it did happen, and she's skeptical, "Pocahontas probably was not at [Werowocomoco]" at the time. Literary historian J. Leo Lemay (1992) concluded after a close reading of Smith's text that the rescue took place. Ragan (2006:90-91) sees the entire ordeal of captivity experienced by Smith as a ritual of adoption or incorporation into the Powhatan world.

Smith's Map of Virginia

Now a weroance subject to Wahunsenacawh, Smith was released and later that year (in 1608) embarked on his voyage of exploration of the greater Chesapeake. This voyage is memorialized in part in Smith's important map, "Map of Virginia," a rare and valuable visual glimpse into the Chesapeake Algonquian world (see Figure 1). Smith later described the York and its two major tributaries:

> This River of Pamaunke [that is, the York] is not past twelve miles from that we dwell on [the James], its course northwest and westerly, as the other. Weraocomoco is upon salt water in breadth two miles, and so keepeth his course without any tarrying some twenty miles, where at the parting of the fresh water and the salt it divideth itself into two parts, the one part to Goughland [Youghtanund or Pamunkey], as broad as the Thames and navigable with a boat threescore or fourscore miles, and with a ship fifty, exceedingly crooked and as many low grounds and marishes, but inhabited with abundance of warlike and tall people.
>
> The country of Youghtanund [Pamunkey] [is] of no less worth, only it is lower, but all the soil a fat, fertile, sandy ground. Above Menapacunt [are] many high sandy mountains. By the river is many rocks seeming if not of several mines.
>
> The other branch [the Mattaponi River] [is] a little less in breadth, yet exceedeth not near so far, nor so well inhabited, somewhat lower and a white sandy and a white clay soil. Here is their best terra sigillata [medicinal earth].
>
> The mouth of the river [the York], as I see in the discovery thereof with Captain Newport, is half a mile broad, and within four miles not above a musket shot, the channel exceedingly good and deep, the river straight to the divisions; Kiskiack the nearest nation to the entrances [Barbour 1986:I:57; Haile 1998:162-163].

During the mapping expedition, Wahunsenacawh received Smith and Captain Christopher Newport at Werowocomoco, with Smith inviting the paramount chief to Jamestown to receive a crown and some presents from the English king, James I. Wahunsenacawh refused, so Newport and a group of settlers went to Werowocomoco in the fall of 1608 where a "coronation ceremony" was held. In exchange for the gifts sent by the king, Powhatan gave Newport his mantel and his shoes.[22] Still, the coronation ceremony apparently did not go well. Wahunsenacawh either did not understand or refused to accept a ceremony requiring him to kneel to another sovereign.

Smith and Newport continued on up the York, visiting Opechancanough at Pamunkey. Newport sailed upstream to Menapucunt, just above Lee Marsh, returning downstream the following day. Newport

[22] Gallivan (2016:169) suggests this exchange could be the source of the deerskin mantle now at the Ashmolean Museum in Oxford, England.

left Smith at Cinquoteck, near Port Richmond, to search for minerals. The mariners also stopped at a town on the Mattaponi River where a mock battle, later described by William Strachey, was staged for their entertainment. On their way back to Jamestown, Newport and Smith stopped at Kiskiak, where they found the people inhospitable. Rountree et al. surmised that the Kiskiak residents were offended because they had been bypassed earlier in the trading voyage (Barbour 1986: II:181-184; Haile 1998:113-114, 117, 148, 162-163, 166-173, 239, 243-246, 303-307, 667-668).

By now, and especially after the awkward coronation ceremony, Wahunsenacawh was clearly getting tired of Smith and his countrymen, asking Smith when he planned to leave. In early 1609, Wahunsenacawh appears to have had enough, permanently leaving Werowocomoco and withdrawing to Orapaks at the head of the Chickahominy River (Gallivan 2016:170).[23]

The map Smith prepared of Tsenacomacoh (or Virginia, as Smith called it) was published in 1612. The map is richly detailed, depicting geographical features and images of Powhatan at Werowocomoco and a Susquehannock Indian at the head of the Bay ("a Gyant like people"). The map and accompanying journal also show/describe important place locations along with names and descriptions that, if imperfectly understood, are nonetheless first-hand relations (see Figure 1). On the map, Smith used a sketch of an Indian longhouse to identify what he called a "king's seat" or chief's town and a circle to symbolize what he categorized as "ordinary" or less important towns. Smith also mentioned Indian towns in his narrative, *The Generall Historie of Virginia, New-England, and the Summer Isles* (1624), some of which do not appear on his map. The Zuñiga map, which researchers believe is a copy of a map originally made by Smith, the Robert Tindall (Tyndall) map (1608), and the Don Pedro de Velasco map (1610),[24] supplement the information on the Smith map.

The towns depicted along the York, Pamunkey, and Mattaponi rivers in these maps and their approximate modern locations are listed in Table 4. How these towns may have appeared on the ground will require further study. John White's late sixteenth-century watercolors of the towns of Secotan and Pomeioc in modern-day North Carolina, the excavations at Werowocomoco, and a handful of archaeological investigations elsewhere may provide clues for what the towns of the York River valley looked like ca. 1600. White's watercolors show busy townscapes in which activities from different parts of the day or week are simultaneously depicted (Figures 10 and 11). Pomeioc is shown as palisaded, with the houses inside the palisade occupied by the weroance and "his nobles" while Secotan is depicted as more dispersed with no enclosure. White showed crops at Secotan in various stages of growth, arbor-like houses, communal fires, outdoor eating, ritual dancing, and hunting. In addition to corn and tobacco, crops included beans, gourds, and pumpkins. Pomeioc is shown out of context with no fields (Hulton and Quinn 1964).

Archaeological evidence has revealed traces of palisaded enclosures on the Chickahominy River, Potomac, and Patuxent rivers, none of which exhibit the tidy and circular perfection of Pomeioc as White illustrated it. At one time, archaeologists considered these palisades to be defensive enclosures although Thomas Harriott seems to suggest they may have functioned as elite precincts. Following Hariott, archaeologist Christopher Shephard (2009) has argued that the palisaded enclosures may have demarcated spiritually powerful places where ancestors were buried. Such was the case for the palisaded enclosure at Buck Farm on the Chickahominy River.

[23] The seeming increase in tension between Smith and Wahunsunacock and Wahunsunacock's withdrawal up the river appears to mirror similar events in Maryland, including at Moyaone on Piscataway Creek and Secowocomoco on the Wicomico River, where archaeological evidence suggests the towns were abandoned soon after Smith's visits.
[24] There is a question that the Velasco map is almost too good to be true; see Allen (2006).

Name of Town	Symbol Type	Modern Location
York River, north bank:		
Cantaunkack	Ordinary house	Between the mouths of Carter and Aberdeen creeks
Capahowasick	Ordinary house	Between Timberneck and Cedarbush creeks
Wighsakan	Ordinary house	In the vicinity of Fox Creek
Werowocomoco	King's house	Overlooking Purtan Bay
Mattacock	Ordinary house	East side of Adams Creek
Poruptanck	Ordinary house	Upstream from the mouth of Poropotank River, east side
Pasaughtacock	Ordinary house	Opposite Poruptanck, west side of Poropotank River
York River, south bank:		
Kiskiak	King's house	East side of Indian Field Creek
Pamunkey River, north bank:		
Cinquoteck	Ordinary house	Vicinity of Port Richmond near West Point
Menapucunt	King's house	Above Lee Marsh at Romancoke
Uttamussack	King's house	Between two unnamed streams east of Sweet Hall Landing
Kupkipcock	King's house	East of Sweet Hall Landing
Accossumwinck	Ordinary house	Near Cohoke Mill Creek
Osamkatech	Unspecified	Vicinity of Pamunkey Reservation
Pamunkey River, south bank:		
Oquonock	Unspecified	Vicinity of Eltham Marsh and Mill Creek
Mattchamins	Unspecified	Near Eltham Marsh
Acconac	Unspecified	East side of Hill Marsh's upper reaches and south of an unnamed tributary
Potawuncack/Potaucac	Ordinary House	Vicinity of Cousiac Marsh
Attamtuck	Ordinary House	Between Potawuncack and Pamuncoroy
Pamuncoroy	Ordinary house	Near Rockahock Bar and upstream from White House Creek
Rigkahauck	Unspecified	Near Big Creek and Rockahock Bar
Shamapint	Unspecified	West of the mouth of Black Creek
Mattaponi River, north bank:		
Mamanassy	Ordinary house	Opposite West Point
Matchutt	Ordinary house	Near Heartquake Creek
Muttamussensack	Ordinary house	Near Garnett's Creek
Amacauncock	Ordinary house	Located upstream from Muttamussensack
Martoughquaunk	Ordinary house	Just above Walkerton
Utcustank	Ordinary house	West and above the mouth of Georges Swamp across from Roanes Wharf
Mattaponi River, south bank:		
Quackcohewaon	Ordinary house	Shown on the north and south banks on various maps near Peavine Island
Mygtuckpassun	Ordinary house	Near White Bank, southwest of Walkerton
Passaunkack	Ordinary house	Between Aylett and Herring Creek
Unidentified Town	Ordinary house	Upstream from Passaunkack
Near Pamunkey River Head		
Askecocack	Unspecified	Just above Grimes Landing
Unnamed Town	Unspecified	West of Askecocach
Cattachiptico	Ordinary house	Near U.S. Route 360 bridge above Goddins Island
Washasatiack	Unspecified	Above the mouth of Mehixen Creek
Unnamed Town	Unspecified	Near the mouth of Millpond Creek
Enekent (Apocanit)	Unspecified	Opposite the mouth of Mechumps Creek and near Normans Bridge
Parokonosko	Unspecified	Opposite Pampatike Landing
Matunsk	Unspecified	Above the mouth of Whiting Creek
Manaskunt	Unspecified	In the vicinity of the U.S. Route 360 bridge
Mencughtas	Unspecified	Opposite Sutton Neck
Matchut (Muskunt)	Unspecified	Near Route 301 crossing

Table 4. Indian towns located along the York, Pamunkey, and Mattaponi rivers, ca. 1608 (Source: Zuñiga 1608; Smith 1610; Velasco 1610; McCartney and Rountree 2017; Haile 1998:628; McIlwaine and Kennedy 1905-1915:1695-1702:349, 358; McIlwaine 1925-1945:I:320; Nugent 1969-1979:III:76).

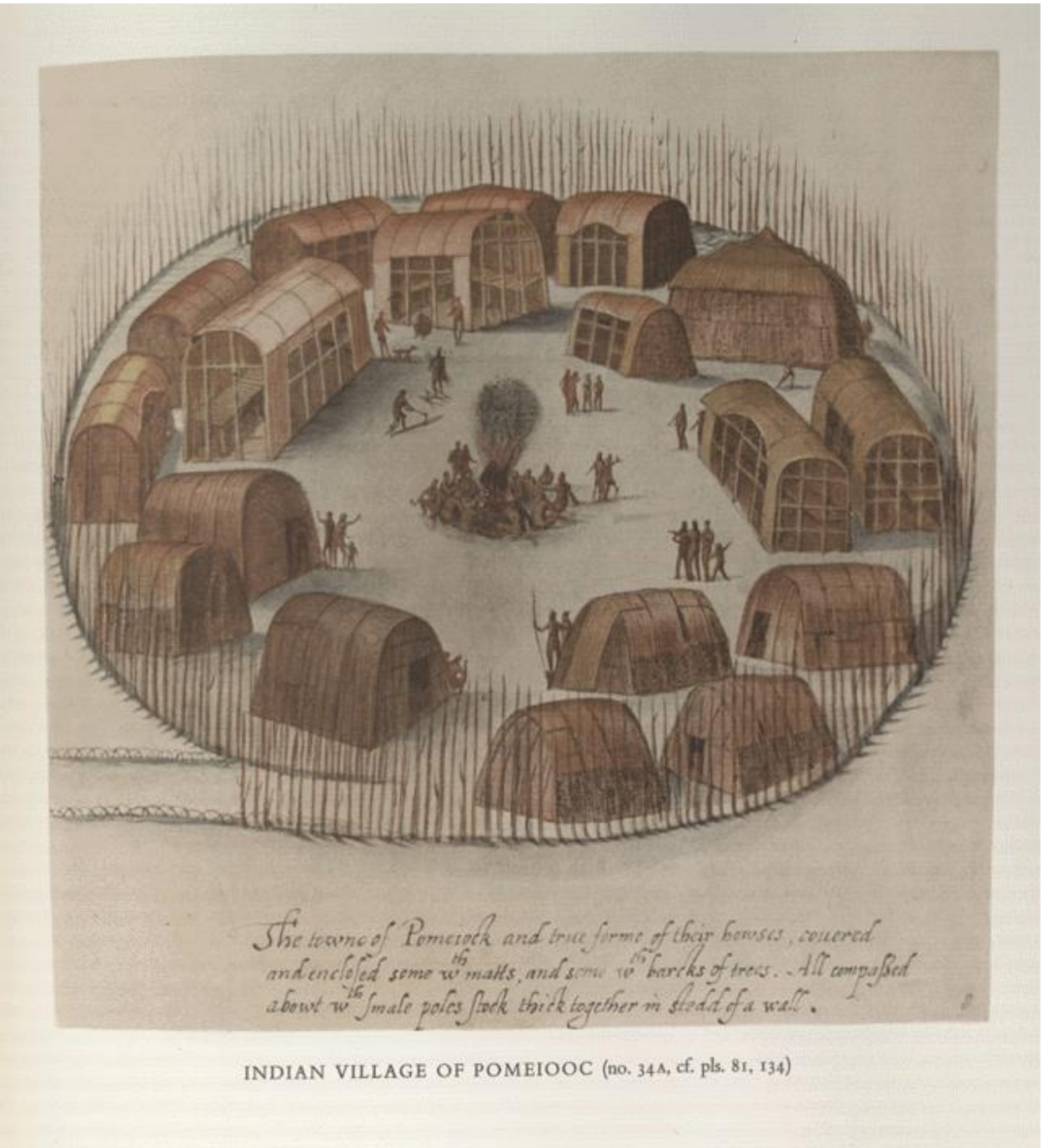

Figure 10. Pomeioc, ca. 1585, by John White (The British Museum).

No palisade has been found at Werowocomoco in association with the wide trenches or ditch-like features (Figure 12) (Gallivan 2016:154). White depicted no such trenches in the towns at Roanoke, while Zuñiga did for Werowocomoco (see Figure 9). House patterns, however, have been found at a number of settlements. Gallivan's analysis of the numbers, sizes, and distributions of structures in the James River valley from ca. 900 CE until 1600 CE suggests settlements slowly grew in size until ca. 1200 CE, when the archaeological record reveals a dramatic increase in the number and size of houses per settlement and

INDIAN VILLAGE OF SECOTON (no. 38A, cf. pl. 135)

Figure 11. Secotan, ca. 1685, by John White (The British Museum).

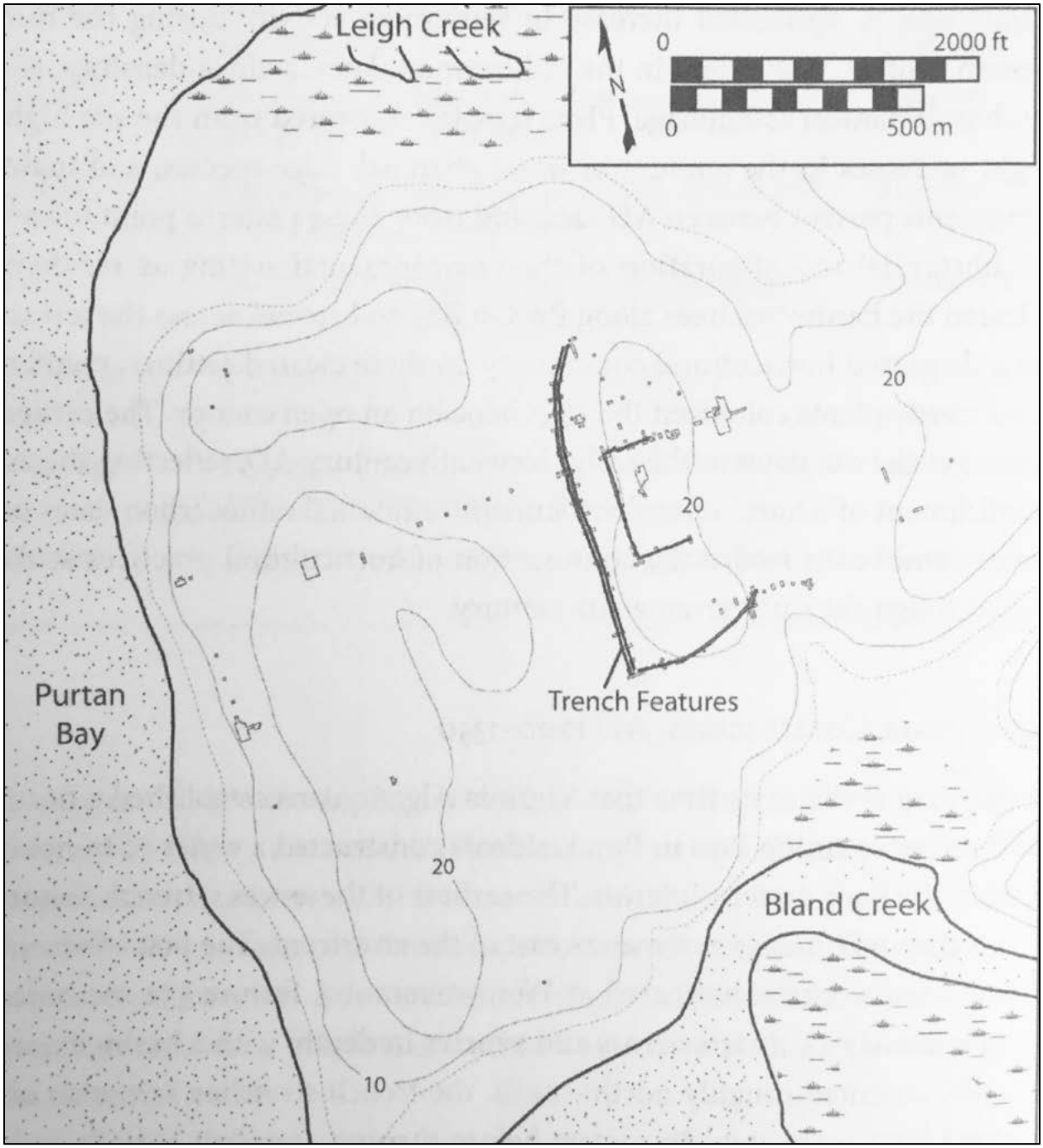

Figure 12. Plan of trench features and longhouse at Werowocomoco (Source: Gallivan 2016:154).

the number of storage pit features. The increased number of households or settlements would require different kinds of community decision-making practices since consensus might not always or ever be possible. By the fifteenth century, the disappearance of pit features suggests above-ground storage of food surplus. Taken together, Gallivan (2003:75-125) interprets these changes as reflecting an increase in social complexity. Villages – or towns – became important "central places" where communal feasting and

communal burial practices provided the setting in which inequality was expressed and mediated through ritual practices.

Uttamussack

The invading English observed that political and religious authority among the Powhatan and other Native groups were intertwined and this was probably the case earlier. Wahunsenacawh was a political leader who was also "filled with manitou, the Algonquian term for the spirit forces that infused certain people, objects, and places on the landscape" (Gallivan 2016:1). This conflation is evident in an analysis of indigenous viewsheds in the Rappahannock valley, where burial grounds were situated in view of major towns and therefore present on an everyday basis (King and Strickland 2018). Smith noted that a temple or religious center with two or three priests could be found in every weroance's territory. The colonists were also aware that some places were imbued with seemingly more spiritual power than others.

The Powhatans' principal temple, "a chief holie house" or quioccosan, was located at Uttamussack on the Pamunkey River, depicted on the Smith map with a "king's house" (Haile 1998:652; Nugent 1969-1979:I:358). At Uttamussack, Smith reported

> . . . there are 3 great houses filled with images of their kings and Divels and Tombes of their Predecessors. Those houses are neare 60 foot in length, built arbor wise, after their building. This place they count so holy that [none] but the Priestes and kings dare come into them: nor the Savages dare not go up the river in boats by it, but that they solemnly cast some peece of copper, white beads, or Pocones into the river, for feare their Okee [god] should be offended and revenged of them. In this [particular] place commonly is resident 7 Priests . . . [Barbour 1986:I:69].

In 1704, Robert Beverley II paraphrased Smith when he described Uttamussack as the place

> . . . where was formerly the principal Temple of the Country, and the Metropolitan Seat of the Priests, in Powhatan's Time[.] [T]here stood the Three great Houses, near Sixty Foot in Length, which [were] fill'd with the Images of their Gods; there were likewise preserved the Bodies of their Kings. These Houses they counted so holy that none but their Priests and Kings durst go into them, the common People not presuming, without their particular Direction, to approach the Place. There also was their great Pawcorance, or Altar-Stone, which, the Indians tell us, was a solid Crystal, of between three and four foot Cube, upon which, in their great Solemnities, they used to sacrifice. This, they would make us believe, was so clear that the Grain of a Man's Skin might be seen through it; and was so heavy too, that when they remov'd their Gods and Kings, not being able to carry it away, they buried it thereabouts: but the Place has never been yet discover'd (Beverley 1947:126-127).[25]

Beverley broke into an actively used temple in the late seventeenth or early eighteenth century, possibly the Chickahominy's temple at their settlement near Aylett (Beverley 1947:195-196; Rountree 1990:153). After removing about "fourteen logs" from in front of the door, Beverley and some companions discovered a windowless "temple" with a small hearth and roof vent, posts with faces carved and painted on them, and a partition behind which were found human bones bound up in mats, wooden "tomahawks," and a dismantled wooden figure Beverley called "their idol." Beverley understood the solemnity with which the Natives treated these temples and, after an hour, put the materials back for fear of "offering an affront" to the Indians should they come upon the colonists having broken into their temple. It is possible that

[25] Smith also described "certain altar stones they call Pawcorances; but these stand from their Temples, some by their houses, others in the woods and wildernesses" (Barbour 1986:I:69).

Beverley visited the Mattaponi Indians' temple located in Essex County, near the head of Piscataway Creek, which was near Beverley's landholdings (McCartney and Rountree 2017:90).

Opechancanough and the Defense of Tsenacomacoh

Following Smith's captivity at Werowocomoco, the troubled coronation ceremony attended by Newport, and Wahunsenacawh's withdrawal to Orapaks, relations deteriorated between the Powhatans and the occupying English. Anthropologist Margaret Huber (2015) described Wahunsenacawh's undisguised annoyance with Smith, who Wahunsenacawh had made into "a weroance but [who was now] acting like a mamanatowick, roaming beyond the area granted him by Wahunsenacawh and demanding food and labor." Wahunsenacawh made it clear to his countrymen that the English should be given no quarter. The aging chief, however, backed off his orders when, in 1613, his daughter, Pocahontas, married an Englishman. Physical hostilities abated for the moment, although Wahunsenacawh remained contemptuous of the English at Jamestown.

Wahunsenacawh died in 1618 and was succeeded first by one brother, Opitchapam, and then by another, Opechancanough, whose town was on the Pamunkey River. A 1662 map by Anthony Langston shows "Menmend, an ancient seat of Opachancone [Opechancanough] ye late Emperour," which was located on a large island near Carter's Landing, east of Manquin Creek (Figure 13) (Langston 1662). Opechancanough was even less enamored of the tassantasses than his brother. On March 22, 1622, he launched a vigorous offensive to cripple and ultimately drive the intruders from Tsenacomacoh. The 1622 defensive attack, perhaps staged as part of the final burial ritual for Wahunsenacawh, killed an estimated one-third of the colony's population and was seared into colonial memory. The attack did little to stem the tide of expanding settlement, but Opechancanough's point was made. The settlers responded by setting out to extirpate the Indians by laying waste to their towns and destroying their food supply. In April 1623, when the Powhatan made an overture for peace, the colonists agreed but toasted a spurious treaty with a cup of poisonous wine. As 1623 drew to a close, the colonists began returning to the outlying plantations they had abandoned and they also continued to press their offensive against the Indians in an attempt to force them into submission (Hening 1809-1823:I:140, 141, 457, 467-468; II:139, 141-143, 151-152, 155, 161-162, 171-172; Kingsbury 1906-1935:III:556-557, 652-653, 708-710; IV:37, 221-223, 236-237).

The Indians of the Powhatan chiefdom watched uneasily as increasing numbers of European colonists continued to invade their territory and work to dispossess them of their land. On April 18, 1644, they made a second attempt to drive the settlers from their homeland. This second defensive attack, reportedly led by Opechancanough, claimed an estimated 400 to 500 colonists' lives. Retaliatory marches were undertaken against specific Native groups, especially the Pamunkeys and the Chickahominies. Captain William Claiborne, as "General and Chief Commander," led a large, well-equipped army against the Pamunkey Indians' stronghold in Pamunkey Neck, destroying their towns and corn fields. The Indians withdrew into the forest and then dropped out of sight. Claiborne, meanwhile, was authorized to take possession of Romancoke, the acreage where "he first landed against the Indians" (Hening 1809-1823:I:237, 287; Force 1963:II:7:6; II:8:1; Beverley 1947:60-61; Stanard 1915:229-231; McIlwaine 1924:277, 296, 501-505, 562-564).

By March 1645, construction of a military outpost was underway in Pamunkey Neck at a site several miles above the mouth of the Pamunkey River. There, in the Pamunkeys' heartland, the armed men of Fort Royall, at the mouth of Manquin Creek, were charged with maintaining vigilance over the Native group that had played a major role in both the 1622 and 1644 attacks. Other garrisons were built at or near the falls of the James (Fort Charles) and on the Chickahominy River, at the mouth of Diascund

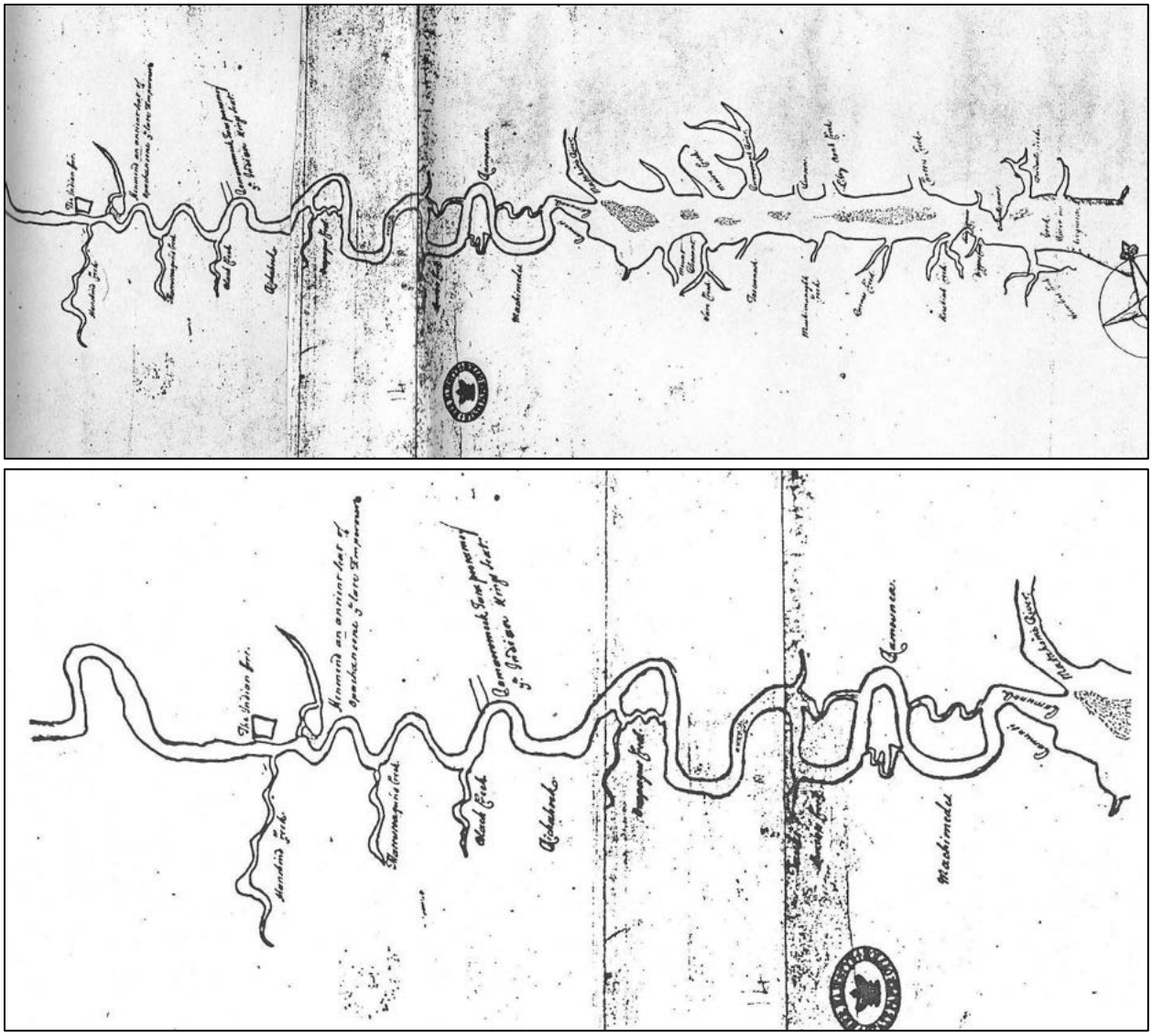

Figure 13. The York and Pamunkey rivers as depicted on "Draft of York River in Virginia," 1662 (Langston 1662).

Creek (Fort James). In March 1646, the construction of Fort Henry, at the falls of the Appomattox, was authorized. These mid-seventeenth-century strongholds were probably reinforced frame buildings (Hening 1809-1823:I:315, 318, 317; Nugent 1969-1979:I:187, 234, 249, 255, 403, 411; II:222; Beverley 1947:60-62).

In the fall of 1645, Opechancanough's whereabouts were discovered and the aged paramount chief was captured and brought to Jamestown. While incarcerated at Jamestown, the aged leader was murdered by a soldier whose family had perished at the hands of the Indians. With Opechancanough dead, the colony's leaders decided that Native warriors age 11 or older who had been taken prisoner during Berkeley's expedition against the Indians were to be loaded aboard his ship and taken to Tangier Island, "to prevent their returning to and strengthening their respective tribes" (Hening 1809-1823:I:285-286, 291-294, 315, 318, 317; McIlwaine 1924:227, 296, 501; Nugent 1969-1979:I:187, 234, 249, 255, 403, 411; II:222; Beverley 1947:46-48, 60-62; Force 1963:II:7:6; II:8:13).

Opechancanough's immediate successor, Necotowance, concluded a formal peace agreement with the Virginia government in October 1646, not long after the Indian prisoners had been taken to Tangier Island. The 1646 treaty dramatically reconfigured the Native landscape. The Indians agreed to withdraw from the James-York peninsula east of the fall line and to abandon their territory on the lower side of the James. Natives entering the ceded territory would be killed lawfully, unless they were garbed in "a coate of striped stuff," signifying that they were official messengers. Colonists seated on the north side of the York River prior to the signing of the treaty were to withdraw from that area. Settlers who disregarded the new policy were to be deemed guilty of a felony. All trade with the Indians was to be conducted through Fort Henry at the head of the Appomattox River and Fort Royall on the Pamunkey River. For protection from their enemies, the Indians agreed to pay an annual tribute to the Crown's representatives. They also agreed to allow the colony's governor to appoint or confirm their leaders. Two additional checkpoints were created in 1647 for the use of Indians needing to enter the ceded territory on official business. One was at Kiskiak (now occupied by Captain William Tayloe). The presence of European settlement along the Chickahominy River forced the Chickahominy Indians into the Pamunkey Indians' territory, where they stayed for several generations. The Mattaponi, meanwhile, crossed the Mattaponi River, eventually settling at the head of Piscataway Creek in the Rappahannock drainage (Hening 1809-1823:I:323-329, 354).

Not surprisingly, on September 1, 1649, the colony violated the treaty and opened the Middle Peninsula (the north bank of the York River) to settlement. This policy change occurred as the military outposts established in 1645 and 1646 were abandoned (Hening 1809-1823:I:322-327, 354; II:244; Nugent 1969-1979:I:187).

Bacon's Rebellion

Bacon's Rebellion has been the focus of scholarly interest since the early twentieth century. An event that at the time shocked the Crown and revealed the fragility of English authority in an occupied country, Bacon's Rebellion has been interpreted as a foreshadowing of the American Revolution (Wertenbaker 1940), a catalyst for the rise of race-based slavery in Virginia (Washburn 1972; Morgan 1975), and a transformative turning point in Anglo-Native relations (Rice 2012). However one might look at it, the Pamunkey and Mattaponi nations suffered grievously during Bacon's Rebellion.

By the early-to-mid 1650s, Virginia's tributary Indians were occasionally serving colonists as allies in armed conflicts with "foreign Indians." In March 1656, for example, the Pamunkey and Chickahominy Indians helped the colonists drive off 600 to 700 Natives "drawne down from the mountaynes and lately sett down near the falls of the James River." This conflict, traditionally known as the Battle of Bloody Run, claimed the life of Totopotomoy, the Pamunkey Indians' leader.

Bacon's Rebellion, which took place in 1676, grew out of a conflict between an English household and Doeg (or Dogue) Indians in Virginia's Northern Neck. It escalated to involve the Virginia and Maryland militias and "foreign" Indians, probably Susquehannock, in a standoff near Piscataway Creek in Maryland. The Susquehannock leaders were invited to leave their fort for a parley with the leaders of the two colonial militias. What happened next shocked even the Maryland government, as the Susquehannock leaders were executed without cause.[26] The surviving and now enraged Susquehannock escaped their besieged fort and began seeking revenge along the English frontier.

The Virginia Assembly built garrisons at nine strategically important locations near the heads of the colony's rivers, including two within Pamunkey Neck. One was on the Pamunkey River near the mouth of Mehixen (Mahixon) Creek and the land of the Pamunkey Indians' interpreter, Cornelius Dabney. The second was on the lower side of the Mattaponi River, between the Chickahominy Indian town landing and

[26] Among the militia from Virginia was John Washington, the great grandfather of the first president.

"Yerberyes house," the dwelling of the Chickahominy Indians' interpreter, Richard Yarborough.[27] Men and horses were pressed into service and substantial quantities of powder, shot, medical supplies, tools, and provisions were allocated to each fort at public expense. These small, fortified buildings, "made up of mudd and dirt," were costly and unpopular. Moreover, it soon became apparent that they were useless against highly mobile bands of Natives whose strategy was one of ambuscade (Andrews 1967:108; Hening 1809-1823:II:326, 448-453; Washburn 1972:32-33; Colonial Office 1676-1702:1312 Part I ff 318-319).

Nathaniel Bacon, who lived on the James River frontier below the falls, took advantage of the Susquehannock's retaliatory raids to conduct an unauthorized march on Native people and in the process overthrow the government at Jamestown. When Bacon and his men marched to Jamestown and confronted the colony's governing officials, they forced the assembly, at gunpoint, to enact a group of laws. One law made it legal to patent Indian land as soon as the Natives abandoned it, thereby giving aspiring patentees an incentive to drive the Natives off (Hening 1809-1823:II:326-329, 351; Washburn 1972:32- 33).

Afterward, when Bacon failed to raise more men to march against the Indians on the colony's frontiers, he vented his wrath on the Pamunkey Indians. Bacon pursued the Pamunkeys into King and Queen County's Dragon Swamp, where they had taken refuge. Bacon's men had happened upon a path that "led them to a main Swamp, where several nations of Indians lay encamped." Bacon's force indiscriminately killed men, women and children, took captives, and plundered their goods. Some Indians were able to flee from the scene. Later, Bacon put his Pamunkey prisoners on display to demonstrate his prowess as an Indian fighter (Andrews 1967:125).

Fighting continued after Bacon's death in October, 1676, with Charles II sending troops to restore order in November. When the King's Special Commissioners arrived in Virginia in early 1677, Cockacoeske, Queen of the Pamunkey Indians, presented a petition to the Council and the Assembly asking them to restore goods and land seized by Bacon's men. She also sought permission for her people to gather bark from the settlers' land for use in building cabins. She indicated that the Pamunkeys would like to fish at Powhite (on the James) and hunt on frontier land and the settlers' plantations (McIlwaine 1905-1915:1660-1693:89).

The colonial government made a formal peace agreement in 1677 with the tributary Indians, a document that became known as the Treaty of Middle Plantation. Cockacoeske, her son, Captain John West, whose father was Colonel John West; and several other Native leaders, notably, the King of the Nottoway, the King of the Nansemond, and the Queen of the Weyanoke, came to Middle Plantation (near present-day Williamsburg), where they endorsed the treaty. Peracuta, King of the Appomattocks, also went to Middle Plantation intending to sign, but was turned away because some of his people stood accused of murder. Special gifts were ordered for the Indian kings and queens who signed the 1677 treaty. The Queen of the Pamunkey, who had signed on behalf of her own people and "some small scattered nations," was singled out for special recognition on account of her steadfast loyalty to the English. The leaders of the Mattaponis, Chickahominies, and Rappahannocks, and almost certainly the Chiskiack and Totachus did not sign either version of the 1677 treaty, presumably because they were among the "scattered nations" united under the Queen of the Pamunkey who endorsed it on their behalf. The Indians, by approving the Treaty of Middle Plantation, again acknowledged their allegiance to the Crown and conceded that they derived entitlement to their land from the monarch (McCartney 2006:249-251).

One important provision of the 1677 treaty was that "Noe English shall seate or plant nearer than three Miles of any Indian towne and whomever hath made an encroachment upon their Land shall be

[27] Patent research suggests strongly that the fort on the Mattaponi was near the two Herring creeks, that is, Aylett and Herring-Dorrell creeks near Aylett (Hening 1809-1823:II:326-328; Nugent 1969-1979:II:267; III:50, 74, 77, 144, 364).

removed." Another was that signatory tribes were entitled to the protection of the colonial government. All Tributary Indians were to have equal power except the Queen of Pamunkey, who ruled "severall scattered nations." In 1680, the Treaty of Middle Plantation was expanded to include six additional Native groups: the Saponi, the Manakin, the Meherrin, the Nanzattico, the Nansemond, and the Portobago. Again, the Chickahominy, the Chiskiack, the Mattaponi, the Rappahannock, and the Totachus were absent, probably because they were considered under the leadership of the Pamunkey Queen (McCartney 2006:256- 259).

In reality, the Treaty of Middle Plantation provided the Natives with very little protection from land-hungry settlers. Moreover, sporadic outbreaks of violence continued to plague the colony's frontiers with Tributary Indian groups threatened by so-called "foreign" nations. A year after the May 1677 treaty was signed, the Pamunkey Indians' interpreter made a formal complaint about the Senecas, who posed a threat to the Pamunkeys. The Iroquois, who were described as "a very powerful Northern Nation" living in the interior of the continent, had descended to the heads of the colony's rivers. To further complicate matters, the tributary groups often quarreled among themselves and took their disagreements to court, a privilege to which they were entitled under the 1677 treaty (Hening 1809-1823:II:275, 410; McCartney 2006:257-258).

Some of the Native groups the 1677 treaty made subservient to the Pamunkey Queen had been relatively independent for 30 years and chafed at the idea of obeying her orders and paying tribute to her. In June 1678, her interpreter, Cornelius Dabney, informed Lt. Governor Francis Moryson that she was having problems with the Chickahominies, who refused to pay her tribute, obey orders, or live in her town. Cockacoeske said that "ye Chickahominies first coming in, they desired ... that they might have Liberty to plant their Corne att their Old Towne," but promised to build at her town. She also accused them of poisoning one of her great men, plotting revenge upon eight more, and harboring her son's wife who had run away. Cockacoeske's statement that the young woman had been "bred and born at Chickahominy though her Parents were Pamunkeys" attests to the two groups' close interaction (McCartney 2006:256-259).

The Chickahominies claimed that Cockacoeske had "cut off soe many Chickahominy heads," but Secretary of the Colony Thomas Ludwell said that he was confident that the Queen of Pamunkey didn't mistreat the "several Indian nations again united under that family." He added that "most of the young men of the several townes being dissatisfied is contemptible at their new subjection to that Queen wch they say was consented to by consent of old men against their wills." Ludwell noted that these young men "doe lie off in hiding in the woods and will not come in" and said that if they were given their former liberty, the Queen of Pamunkey would take it as a breach of the peace agreement. Nonetheless, the colonial government could not force them to be subservient "but by hazarding another warr wch would bring on great Disorders if not another rebellion amongst us." Eventually, the rift between the tribes became so great that the Chickahominies and Rappahannocks were assigned land of their own (McCartney 2006:256-259).

Although little is known about the resolution of the conflict between the Pamunkey queen and the groups under her sway, archival records reveal that, from the 1670s through the early 1700s, the Chickahominies continued to reside in a town of their own near the Mattaponi River (McIlwaine 1925-1945:I:71).

The Establishment of Preserves

Today, land ownership, including reservation land, is a foundational element to Pamunkey, Mattaponi, and Upper Mattaponi identity. As the present project has shown, social and cultural memory are, for the three tribes, embedded in the land. For the Pamunkey, the Reservation landscape and the Pamunkey people "could not exist without the other" (Spivey 2017:9).

A frequently heard point about the indigenous relationship to land is that, unlike the English system, Natives did not hold land privately. Land was nonetheless just as important to Native people, a fact demonstrated by Native struggles since the early seventeenth century to resist an often violent dispossession of their land and a resulting displacement. These struggles persisted into the eighteenth and nineteenth centuries as descendants of the settlers illegally entered Native lands, sometimes using the trope of Indian disappearance to justify their actions. Some of these unwelcome European squatters were among the colony's elite while others were simply middling Englishmen in the neighborhood.

One of the first efforts to "protect" Native land occurred in October 1649, when Virginia officials allocated 5,000 acres of land each to the leaders of the Pamunkey, the "south" Indians or Weyanoke, and the "north" Indians or Chiskiack. The allocation followed Native acknowledgment of English sovereignty. Native leaders requested patents for the land, although none were issued (Billings 1975:229).

In November 1652, the Colonial Assembly, still recognizing the pressures Native people were under, resolved to assign tracts reserved exclusively for Indian occupancy and "all the Indians of the collonye shall hold and keep those seats of land that they now have." No Englishman was to "Intrench or plant upon such places as the Indians claim" without the consent of the governor or the locality's justices (Billings 1975b:73). In July 1653, Totopotomoy (then Chief of the Pamunkey) asked the assembly for a legally binding title to Pamunkey land. The burgesses directed him to choose between the acreage he was then occupying or a tract called Ramomak (Romancoke), which historical maps suggest was just east of (or perhaps included) Uttamussack[28] (Hening 1809-1823:I:380; Fry-Jefferson 1751). Totopotomoy apparently decided to stay where he was and the patent was issued in September 1653. A map prepared in 1662, six years after Totopotomoy's death, reveals that Totopotomoy's town was then several miles upstream at Pamamomeck, between Jack's Creek and the peninsula that comprises the Pamunkey Indian Reservation (McCartney 1984:97-110; Langston [1662]; Nugent 1969-1979:I:358-359; McIlwaine 1924:482, 502).

Still, little progress was made in preserving and protecting Indian lands. As noted in the previous section, many high-ranking officials had few inhibitions about claiming the acreage set aside for the Indians. Secretary of the Colony Ralph Wormeley, for example, patented a massive tract in Pamunkey Neck that impinged upon the Natives' territory. Many land-hungry settlers preferred to acquire the Indians' land because it had already been cleared for planting, an arduous and time-consuming task (Hening 1809-1823:I:393).

In March 1658, the Assembly addressed the problem by allocating each Indian group 50 acres per bowman to be taken as an aggregate. They also placed a moratorium on patenting land until each Native group had been assigned acreage. Colonists seated within three miles of an existing Indian town were to vacate their land unless they could produce legal title. Those legitimately seated within Native preserves were ordered to pay the Indians from whom they had bought the acreage and they were to assist them by enclosing a cornfield large enough to meet the Native community's needs while keeping the settlers' livestock out of Indian gardens. The quantity of land, however, was far less than what was needed for Native subsistence and it restricted the ability to hunt and forage (Force 1963:I:8:14-15; Hening 1809-1823:I:393-396, 415- 416, 457-458; McIlwaine and Kennedy 1905-1915:1619-1660:75, 94).

Although specific tracts of land were assigned to a number of Indian groups by colonial authorities during the mid-seventeenth century, often, the legality of the patents issued to frontier settlers hinged upon the Indians' deserting their land. This tempted colonists to drive the Natives from their homes. In other cases, the Indians divested themselves of large portions of their land. Competition for the lands of the Mattaponi, Chickahominy, and Pamunkey Indians was particularly keen and, in March 1662, it was reported that Edward Dennis "hath without title or claime, seated himselfe in the Indian towne of

[28] Near Sweet Hall Landing.

Chickahomini." The Mattaponi also had problems. In March 1662, the "King" of the Mattaponi filed a legal complaint against a man who allegedly had set the Mattaponi leader's English house ablaze in an effort to drive him from his land. The Mattaponi were then living at the head of Piscataway Creek, within the Rappahannock drainage. Following the fire, they moved to a new site on the Mattaponi River in the vicinity of Deep Run (McIlwaine 1905-1915:1660-1693:16; Hening 1809-1823:II:151-152, 155, 161-162, 275; Nugent 1969-1979:II:19, 27, 87, 142, 358; III:97).

By March 1662, the assembly noted that "mutuall discontents, complaints, jealousies, and ffears of the English and Indians proceed chiefly from the violent intrusions of diverse English . . . forcing the Indians by way of revenge to kill the cattle and hogs of the English . . . to the disturbance of the peace." The Indians' acreage allowance was generalized as a three-mile ring (or buffer) around each Indian town, an area encompassing 18,096 acres. Colonists seated within three miles of an Indian town were again ordered to leave unless they could prove their land title. Those seated within the boundaries of a Native town were once again ordered to assist its inhabitants in fencing a corn field large enough to meet that community's needs. The official boundary line established by the 1646 treaty between the Pamunkey and the English was reaffirmed within the territory on the lower side of the James River. No mention, however, was made of the land north and west of the James-York peninsula (Hening 1809-1823:I:457, 468; II:139, 141-143)..

A 1662 law required Indians entering colonized areas to wear silver or copper badges inscribed with the name of their town; those lacking badges were subject to arrest. Native mobility was a source of English anxiety, something the assignment of land would never entirely resolve. The colonial assembly concluded it needed to do something about Indian mobility. Indians, who were obliged to carry passes whenever they entered the colonized area, were authorized to hunt, fish, and gather as long as they were unarmed (Force 1963:I:8:14-15; Hening 1809-1823:I:393, 415-416; McIlwaine 1905-1915:1619-1660:75, 94). Hunting without arms, of course, could be a problem.

The 1677 Treaty of Middle Plantation, signed following Bacon's Rebellion, reaffirmed that no English settlers should "seate or plant nearer than three Miles of any Indian town." The 1677 treaty referenced "the Town where the said Indians now inhabit, that being the place whereon they were seated at the time of the said Articles [treaty] and on which they have ever since continued." The assembly reiterated that the Indians could neither sell nor lease their lands without the assembly's permission and that the acreage conveyed to them under the terms of the 1677 treaty was thought to be sufficient. The legality of the 99-year leases the Pamunkeys had given to eight people were approved. They also recommended that leases be given to 36 other individuals as soon as it became legally possible and suggested that those people be invited to register their claims. Almost immediately, prospective patentees made requests for literally thousands of acres of land (McIlwaine 1925-1945:I:41; II:94-95; Nugent 1969-1979:III:35-92; Descognets 1958:57, 59-63).

Hemmed in by land-hungry colonists, the Pamunkey and Mattaponi river Indian groups also faced pressure from "foreign" or "Northern" Indians, with this pressure ratcheting up ca. 1681. On November 21, 1683, Nicholas Spencer, then president of the Council of State, reported that the Senecas[29] were attacking frontier settlers and that they also had "redced and taken ye Mattapony Indian Town, and att present besieged ye Chickahominy fort," a Native settlement that probably was between Aylett and Herring-Dorrell creeks. Virginia's governing officials were prompted to take action. Colonel William Byrd was ordered to negotiate with the Seneca to secure a peace agreement. Minutes of the Governor's Council reveal that Byrd met with them in Pamunkey Neck. A week after Nicholas Spencer gave his report, the Rappahannock were advised to unite with the Nanzattico for their own protection. Provisions, including corn and beef, were delivered to the Rappahannock and the Chickahominy. All of the colonists who supplied the tribes with relief lived near the mouth of the Mattaponi River. Afterward, the Chickahominy may have moved back to

[29] "Senecas" was often a catch-all term for any "foreign" or "Northern" Indian, including the Susquehannocks.

Pamunkey Neck, where they sought refuge with the Pamunkey Indians. They also sent two men to Albany, New York, in 1684 to confirm a peace agreement with the Senecas. Colonial officials continued to assert their authority over the Tributary Indians and, in 1699, Virginia's governor censured them for making plans to execute a treaty with some "foreign Indians" without having secured official approval (Nugent 1969-1979:II:267, 286-287; McIlwaine 1925-1945:I:53-54, 71, 496; II:41; Palmer 1968:I:22; Hening 1809-1823:II:39; McIlwaine and Kennedy 1905-1915:1659/60-1693:256).

On May 1, 1688, Virginia's governing officials asked the English king for permission to issue patents for vacant Indian land in Pamunkey Neck, slyly using the threat of "foreign Indians" as a justification for putting plantations on land they saw as vacant. The councilors noted that, in former times, "very considerable nations of Indians, Consisting of great Numbers, but are now wasted and dwindled away, however doe [still] hold and possess [the land] . . . by which means those parts of the Countrey lyes open to the Foreign Indians." The councilors claimed that the tributary Indians supported this request, noting that the Indians had found that "Such large Tracts of Land are of noe benifitt nor use unto them" and had asked the governor to admit settlers to their property (McIlwaine 1925-1945:I:71, 94, 130, 284; 1905-1915:1660-1693:125, 386, 431, 433).

It is not clear what the King's response was as two years later, in 1690, the Council again asked for the right to patent vacant Indian lands. They repeated their request a few years later (it appears the King was not amenable to these requests). Meanwhile, planters regularly asked the assembly for the ability to patent land within the prohibited territory. Surveyors were ordered not to lay out property within Pamunkey Neck and the government occasionally evicted settlers from Native land. One planter, who had purchased 1,200 acres from the Pamunkey Indians and built a tobacco house, was ordered in October 1690 to burn the building and surrender his patent. That same month, people who had seated themselves upon the Chickahominy Indians' land in Pamunkey Neck were ordered to get out (McIlwaine 1925-1945:I:71, 94, 130, 135,284; 1905-1915:1660-1693:125, 386, 431, 433).

The College of William and Mary, chartered in 1693 and located in Middle Plantation (now Williamsburg), had received a bequest to undertake Christian missionizing efforts among the Indians. The goal, at least for the English, were Indians acculturated to English ways. The practical result, however, were Native men who returned to their natal towns with a better understanding of the English legal system and the legal skills to protect Native communities. Indian boys came to the school from all over the region, including from Pamunkey.

Ten thousand acres of Pamunkey Neck land had been allocated as an endowment for the newly chartered school. Restrictions upon patenting land in Pamunkey Neck, however, were to remain in effect through April 20, 1696, although the College retained the right to survey and claim land there. The interpreters assigned to various Native groups were ordered to determine the groups' population and how much land they had. As of late 1697, the College still had not laid out its charter land and certain councilors, who were also trustees of the College, indicated that the Indian interpreters ordered to determine the size of the Native population and the extent of their land but had failed to do so (McIlwaine 1925-1945:I:41; Descognets 1958:57).

By the end of the seventeenth century, the Pamunkey still struggled to get some protection for their reservation land. In June 1699, the Queen of the Pamunkey and several of the tribe's Great Men presented a petition to the Virginia Assembly's Committee on Claims. They alleged that Secretary of the Colony Ralph Wormeley and others had surveyed and laid off land within the territory allocated exclusively to their use: some of this acreage lay within a mile of the Pamunkeys' town. The Pamunkeys argued that the settlers' entry would force them to relocate. They then reminded Committee members that the 1677 treaty specified that no English settlers were to seat themselves within three miles of their town. The Indians again requested a formal patent for their land, a document that had been promised to them for almost a half-century. They

noted the clause in the treaty that stated "a Patent should be granted to them as is usually to other His Maj'ties Subjects, which Patent tho' often desired by the said Indians was never yet obtained" (Descognets 1958:57).

In July 1700, Virginia's governing officials received the Lords of Trade and Plantations' instructions on how to deal with the land in Pamunkey Neck. They were ordered to uphold the terms of the 1677 treaty and give the Pamunkey Indians a patent for their land. On September 4, 1701, surveyor James Ming (Minge) laid out the Pamunkeys' acreage and some ground assigned to the Chickahominies. The burgesses recommended "that a Pattent be issued to the Pamunkey Indians and their posterity for their lands according to the survey "made thereof by Mr. James Ming" (McIlwaine 1905-1915:1695-1702:283, 285; 1925-1945:I:119; II:94-95, 226, 371; Nugent 1969-1979:III:65, 80).

In 1701, the year King William County was formed from part of New Kent County, a planter named James Johnson was granted 40 acres on Necotowance Creek, "part of the land laid out according to the Articles of Peace for the Pamunkey Indians who at a General Court held October 22, 1701, relinquished their right & pretensions thereto." That acreage was located just west of what would become the Pamunkey Indian Reservation. Johnson descendants owned the property through the eighteenth century. In 1792, Johnson's son, James, Jr. purchased 200 acres of marsh land near the mouth of Old Town Creek. In 1795, James Jr. purchased from Benjamin Grymes 381 acres known as the Old Town Plantation, a tract located behind and just west of the Pamunkey Indian Reservation. At the time of the sale, Johnson was serving as a state-appointed trustee for the Pamunkey Tribe. The name "Old Town" probably refers to the site the Pamunkey Indians were occupying during the second and third quarters of the seventeenth century before moving to the peninsula that became their reservation. On April 1, 1702, Edward Bell was given a patent for 1,400 acres on the west side of Cohoke Creek that traced the shoreline of the Pamunkey River as far west as Mastico Creek. Like James Johnson's land, it reportedly was within the bounds of the land laid out for the Pamunkey Indians (King William County Deed Book 3:162-163, 314, 4:82; Nugent 1969-1979:III:2, 56, 80; Hening 1809-1823:I:224; III:211).

Legislation enacted in October 1705 cost tributary groups a large percentage of their land if the three-mile buffer zone around their towns crossed a navigable river. The assembly decided

> That where an Indian town is seated, on or near a navigable river, and the English have already seated and planted within three miles of the said town, on the opposite side of the river, the said clause [of the 1677 treaty] shall not be construed, deemed or taken, to give the Indian town any privilege on the said opposite side. But in such a case, the privilege of the said Indian town, shall be limited by the river (Hening 1809-1823:III:466).

The burgesses called the new law an "explanation of a clause in the articles of peace." The implications of the new law, however, were much more serious. If, for example, the three-mile ring surrounding the Pamunkey Indians' town were laid out with the town comprising the center of that circle, much of the Pamunkeys' land would have been on the lower side of the Pamunkey River, in New Kent County. Under the new law, the Indians would have lost that acreage if the English had seated it. This issue gives rise to another question: whether or not it is safe to assume that, when a three-mile ring was laid out around an Indian town, the town always was at the center of that six-mile circle. If such was not the case with the Pamunkey Indians' town, their three-mile ring may have extended across Pamunkey Neck, approaching the Mattaponi River. This may explain the legal origin of the Mattaponi Indian Reservation land, which is less than seven miles (as the crow flies) from the Pamunkey Indians' town. It is certain that, in 1701, when the Chickahominy Indians' land was laid out by the colonial government, their town was not at the center of its three-mile ring. Moreover, the Chickahominies' land abutted the Mattaponi River, but did not extend across it.

King William County's eighteenth-century real estate tax rolls and those of much of the nineteenth century attribute only one tract of land to Indians: the Pamunkeys' acreage (Rountree 1990:166). Although King William County tax commissioners, like tax officials throughout Virginia, began compiling their records in 1781, it was not until 1797 that it became possible to identify the males of tithable age (those age 16 or older) who lived at "Pamunkey Town" or "Indian Town." The tithable males living there were classified variably and inconsistently as white, free black, or free mulatto (racially mixed), probably on the basis of their physical appearance. The majority of these individuals were described as black and were credited with a horse or mule, an animal that would have provided transportation and been used in farming. Occasionally, a known Pamunkey Indian was said to be in possession of land that was considered "chattel," which suggests that the tax assessor recognized that the Indian did not own it. Personal property tax rolls for New Kent and Charles City counties reveal that some Indians were living in those jurisdictions during the late eighteenth and early to mid-nineteenth centuries (King William County Personal Property Tax Lists 1797-1821; Charles City 1783-1860; New Kent County 1793-1861).

By 1708, planters had increased their demands to settle the sparsely populated land in Pamunkey Neck while Queen Ann, who had succeeded Cockacoeske as leader of the Pamunkeys, claimed that her people were starving. The Council of State expressed sympathy to the would-be patentees and blamed any restrictions on their superiors overseas. Ultimately, Council members complained that many families were leaving the colony on account of the lack of land to patent. Meanwhile, in 1711, the Pamunkey queen complained that "divers persons have seated within the lands" that had been set aside for the Pamunkeys' occupancy. That same year, the Council of State once again decided that copper badges should be issued to the colony's tributary Indians for identification purposes when they were hunting. The Council also asked Queen Ann to present a list of the men, women, and children in her towns so that government officials could better assess the Indians' hunting and foraging requirements. Still, squatters continued to be a problem, for they cut down trees and cleared the ground the Indians used for hunting and foraging (McIlwaine 1925-1945:III:193, 272, 287, 355).

In 1715, Queen Ann asked for protection from three men who had bought acreage within the Pamunkeys' three mile ring. She claimed that the buyers, "taking advantage of ignorance, doe every year clear, build and occupy our Land whch is beyond that we sold them." She asked for protection from these squatters, as her people were then "a small poor nation" (Palmer 1968:I:184-185; Beverley 1947:232-233; McIlwaine 1905-1915:1702-1712:121).

In 1781, Thomas Jefferson noted that the Pamunkey "have about 300 acres[30] of very fertile land on the Pamunkey River, so encompassed by water that a gate shuts in the whole" (Jefferson 1954:96). He added that the Mattaponi were in possession of approximately 50 acres of land about ten miles overland from the Pamunkeys' reservation (McIlwaine 1905-1915:1660-1693:16; Hening 1809-1823:II:151-152, 155, 161-162, 275; Nugent 1969-1979:II:19, 27, 87, 142, 358; III:97; Jefferson 1954:96).

The Pamunkey Indian Town is shown on a map of the State of Virginia printed in 1826 (Figure 14) and on a "Map of King William County," prepared in 1865 (Figure 15). The Mattaponi Indian Town is also shown on the 1865 county map (Figure 16). Finally, an earlier version of this map (1864) shows the label, "Indians," in the vicinity of Adamstown (Figure 17).

The Chickahominy Indians in Pamunkey Neck and the Origin of the Upper Mattaponi

[30] In 1781, Jefferson noted that the Pamunkey had a reservation of 300 acres; as noted in the sections, below, by the 1840s, documents suggest the Pamunkey's reservation consisted of 1,500 acres. These discrepancies should not be ignored but reveal the inconsistencies – and perhaps the biases – found in documents.

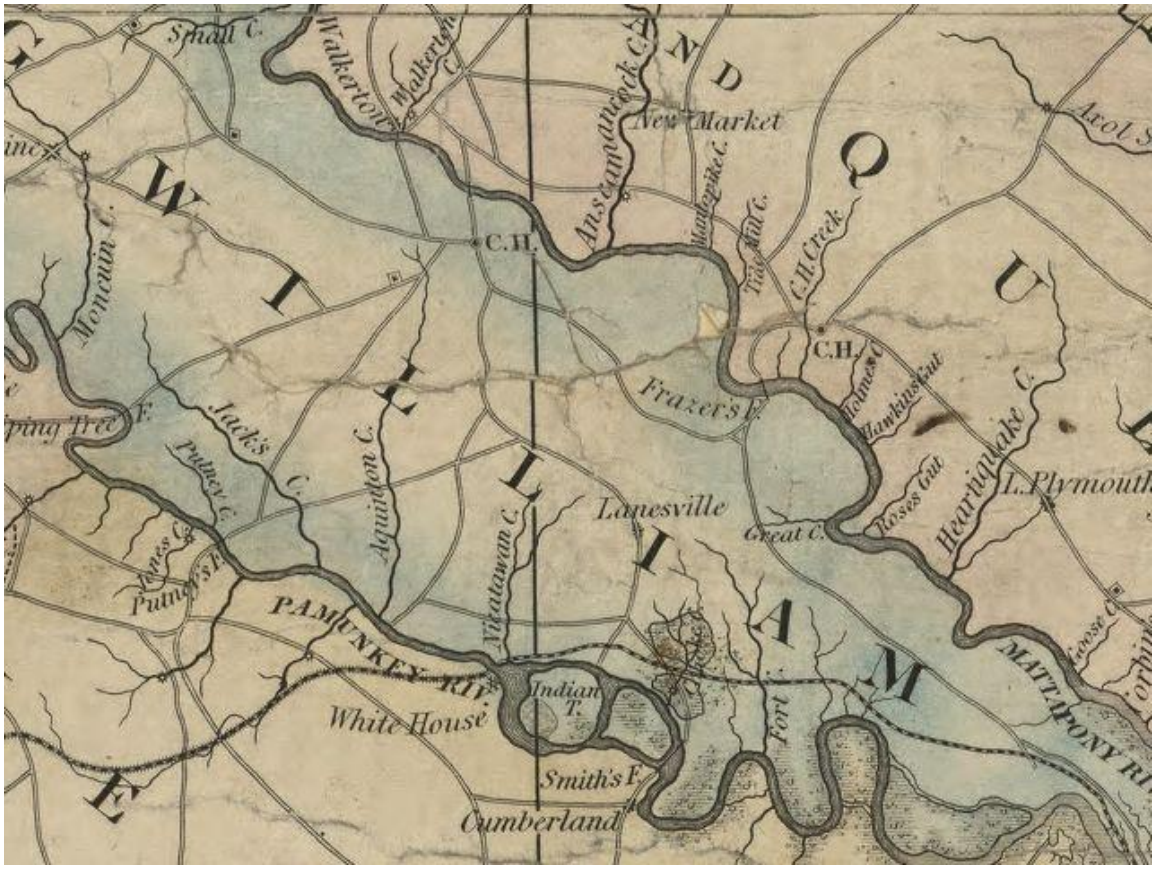

Figure 14. "Map of the State of Virginia" (Boye 1826). Note "Indian T.," the Pamunkey Indian town.

Figure 15. "Map of King William County" (Gilmer 1865). Note "Indian Town," the Pamunkey Indian town.

Figure 16. "Map of King William County" (Gilmer 1865). Note "Indian Town," the Mattaponi Indian town.

Figure 17. "King William County" (Gilmer 1864). Note "Indians" in the vicinity of Adamstown.

Both Frank Speck (1928:265) and Helen Rountree (1990:160, 215) have suggested that the Chickahominy people living in the area around modern-day Aylett are ancestral to the Upper Mattaponi. The Chickahominy had been pushed into the York River drainage as early as 1652, when a law that year notes "Chickahominyes on the north side of pamunmckye River." In 1669, a census found 60 Chickahominy bowmen (or about 255 people according to Turner [1976, 1982]) in the York drainage. By 1677, a Chickahominy Indian town was located to the west of modern-day Aylett. Some documents suggest that the Chickahominies included Mattaponis: a 1705 patent refers to the "Mattapony Indian towne or Chickahominy" and an earlier document refers to "Mattaponi-alias-Chickahominy."

In 1689, the chief leaders of the Chickahominy, who were then living in a town near the head of the Mattaponi River, asked the government's permission to move to Richahock, a tract on the north side of the river and several miles downstream. They indicated that they had acquired Richahock from Benjamin Arnold in exchange for acreage they had elsewhere.[31] The Chickahominies said that problems with hostile Senecas had forced them to take refuge with the Pamunkeys (Palmer 1968:I:22). In October 1694 and now at Rickahock, the Chickahominies again asked permission to move. This time, they wanted to go to Quaynohomock, a tract "over against them in Pamunkey Neck, not Improved and formerly theirs," for they were unable to make a living at Rickahock. The Chickahominies' request was referred to the justices of the county court (McIlwaine 1925-1945:I:320).

The Chickahominies' claim to Quaynohomock on the basis of tradition is substantiated by the minutes of a March 1661 assembly meeting, which state that "Whereas a certain grant hath been made to the Chickahomini Indians of certaine lands in which tract Major Generall Manwaring Hamond [Hammond] claimeth a devident of two thousand acres granted by patent, It is ordered that Major Generall Hamond be desired to purchase the same of the Indians or to procure their consent" (Hening 1809-1823:II:35). Hammond's November 1, 1654, patent, registered in the name of his kinsman, Francis Hamond, was for 2,000 acres on the lower side of the Mattaponi River, in an area seemingly analogous to Quackcohowaon, an Indian town shown on Smith's map (Nugent 1969-1979:I:298-299; Smith 1610).

The Chickahominies probably never recovered Quaynohomock, which was in the vicinity of Horse Landing, since in 1697 they were living several miles upstream near the Herring Creeks near Aylett. They were still there in 1698 when the Quaker missionary Thomas Story paid a visit and attempted to discuss religion. He said that their town was "on the Side of the River Mattapony" and noted in his diary that:

> They are the Chickahominie Indians' and as to their Town, it consists of about eleven Wigwams, or Houses, made of the Bark of Trees, and contained so many Families: We were directed to their Sagamor, or Chief; and when we went to his Door, he came out with a Piece of Cloth about his Middle, but otherwise all naked, and invited us in; and, when we being set down, several of his people came to look upon us, and amongst them, one who could speak some English (Story 1747:162).

In June 1699, Drammaocho, leader of the Chickahominy Indians, asked that "severall lands in Pamunkey Neck should, by the Articles of Peace, May 1677, belong to them and that any sales they had made of these lands should be confirmed." The assembly's Committee on Claims determined that only land within three miles of the Chickahominy Indians' town was theirs and that any sales or leases they had made of that property were null and void. The Chickahominies, however, did have the right to sell acreage they had acquired through outright purchase (Descognets 1958:66).

[31] Part of Arnold's acreage, near the Herring Creeks, eventually became a ferry landing, a site that is identified on the Fry-Jefferson map (1751).

In September 1701, the Chickahominies were granted the land between the two Herring Creeks (now Aylett and Herring/Dorrell Creeks) fronting upon the Mattaponi River. It was noted that the land was being assigned to them in accord with the terms of the 1677 treaty and that it included the property they had been occupying at the time the peace agreement was signed (McIlwaine 1905-1915:1695-1702:285). Assembly minutes state that "the two Herring Creeks shall bound the Indians Land being in the widest place but three miles asunder and in some places much narrower when the Articles of peace gives the Indians three miles round the Indian Towne, the Chickahominy Indians living at the time when the Articles of peace were made in a row at least one mile in length" (McIlwaine 1925-1945:II:226, 259). Then, in May 1702, the burgesses decided:

> That the two Herring Creeks and Mattapony River [should] be the bounds for the three sides of the Chickahominy Indians land; if the creeks run so far that for laying out the three miles from the town backwards, the Surveyor [should] make his Center in the middle of the line of Cabbins where the sd. Indians were located (McIlwaine 1905-1915:1695-1702:358).

This is the location where the Chickahominies and their descendants remained in subsequent years. It was in the immediate vicinity of the early seventeenth-century Indian village called Passaunkack and bordered some land Benjamin Arnold leased from the Chickahominies sometime prior to 1689 and then patented in 1703 (Nugent 1969-1979:III:76; Descognets 1958:58).

In August 1702, the Governor's Council notified the assembly that they had examined the survey and plat Henry Beverley had made of the Chickahominy Indians' land and decided that the tract he had laid out was too large for them. The councilors indicated that they had consulted surveyor James Ming, who was well acquainted with the land and felt that Beverley had "laid out a far greater tract than was ever designed." They said that they did not believe that it was in the Crown's best interest "to give away 14,910 acres to them who are not above 14 men in all, [when] the Pamunkey Indians, who are more in number, being contented with a far less quantity." Afterward, the Chickahominies were summoned to Williamsburg, along with neighboring planters, so that workable boundaries could be agreed upon (Colonial Office 5/1408 ff 462-466; Sainsbury et al. 1964:20:557-558; McIlwaine 1925-1945:II:271).

Woodard and Moretti-Langholtz (2017:40) describe an incident in 1704 among the Chickahominy that resulted in Drammaocho, the Chickahominy leader, "removing first to Pamunkey, and then to a 'Small Tract of Land lying on Mattaponi River.'" The authors note that members from the various towns were "much intermingled," and, by 1710, Drammaocho was represented as a Pamunkey Great Man.

While there were Chickahominy Indians near Aylett in the seventeenth and early eighteenth centuries, by the mid- to late eighteenth century, Chickahominy Indians also remained in their original homeland (in the Chickahominy River valley). A James Bradley is listed as a preacher in Charles City County in 1776, possibly Baptist minister James Bradby who ministered to and married into the Chickahominy community (Moretti-Langholtz and Woodard 2017:39).

When Frank Speck 1928:263-265) visited the Upper Mattaponi in 1923, he described them as "one of the most important of the hitherto little known and unrecognized bands." He noted they exhibited a "consciousness of their Powhatan affiliation." Before the Civil War, he continued, they were free and "there is no remembrance of slavery." Speck noted that the "Adamstown Indians" had "been recognized for many years as Indians by the state school authorities" and had a separate school by the 1880s.

Speck also reported that tribal members noted that "a white man, named Adams, just before the Civil War period, settled with the band and gave his name and identity to most of its members" (Speck 1928:266-267). Both Speck and Mooney thought the Adamstown Indians were descendants of the

Nantaughtacund (Nanzatico) or Rappahannock. King William County records dating to 1885 list non-reservated Indians bearing the surname Adams living in a settlement known as Adamstown. The Upper Mattaponi believe the name probably traces to James Adams, an interpreter in this area between 1702 and 1727. The Adamstown band adopted the name, Upper Mattaponi Indian Tribe, in 1921.

Native Practices and Lifeways

By 1707, Native people had endured a century of colonial occupation filled with the imposition of English law and incidents of violence as they resisted efforts designed to harass, displace, and subjugate them. These actions and incidents deserve attention because they reveal the relentless occupation that had taken hold in Virginia, one justified by the occupiers' belief in the inferiority of non-Christians. Virginia's approach – grounded in a violent warfare – constituted an expensive strategy; so much so that the Calvert family in Maryland, who had watched what had unfolded in Virginia, committed to diplomacy rather than war, revealing that colonialism took many forms on the ground.[32]

The Native people who mounted programs of resistance against this invasion can get lost in a stereotypical narrative that represents Native people as irrationally violent, a supporting character in a largely Anglocentric story, and, finally, disappearing from the scene. These narratives fail to capture the Native lives behind this resistance. Opechananough's offensive – or defensive, as it is perhaps more accurately described – was one form of resistance. Other forms manifested in everyday life.

Archaeological evidence coupled with documentary records indicate that, as the Virginia Algonquians used a variety of strategies to resist the occupation, they also managed to maintain familiar practices and lifeways, no doubt a struggle as they were pushed around their country and displaced from known and necessary resources. Archaeologist Martin Gallivan (2016:174-183) has argued that displacement never meant abandonment, a term which can be easily, but mistakenly, conflated with disappearance and which Europeans took to mean vacated, available land. In reality, Native people often returned to ancestral places to "bury ancestors, sacrifice animals, and inter objects of social importance." Werowocomoco was not "abandoned" when Wahunsenacawh withdrew after hosting the colonists for the "coronation ceremony" that did not go well. A four-to-five-year-old child, for example, was interred at Werowocomoco sometime after 1609, reflecting the town's ongoing power. Similar post-1607 returns are evident at the town of Patawomack on the Potomac River and at Buck Farm on the Chickahominy River (Shephard 2009). Further afield, Thomas Jefferson wrote about Native people returning on a regular basis to a burial ground near Monticello (Hantman 2018).

Except for a few imperfect documents surviving from the first decade of occupation, few colonists were interested in describing everyday Native life. For the greater York drainage, no mid- to late seventeenth-century Native settlements have been excavated to the extent Werowocomoco or Kiskiak have been. The best source of data for this time period comes from post-1650 Native archaeological sites in the Rappahannock River valley and in Maryland. Indeed, in 1651, the Mattaponi relocated to the headwaters of Piscataway Creek in the Rappahannock River valley.[33] The Rappahannock valley became an important location for displaced Indian communities from the James and York rivers and from Maryland given that European settlement did not begin in earnest in that river valley until ca. 1650.

Even as their leaders struggled with how to respond to the tassantasses, Native people maintained observably familiar practices. They continued to grow corn, hunt deer and other small animals, fish, gather

[32] The Calvert family's aim was still to take Native land and reconfigure it as a colonial holding but to attempt diplomacy as a less expensive method.

[33] The location of the Mattaponi town at the head of Piscataway Creek is known although it has not been tested. The town is located within the Rappahannock Indigenous Cultural Landscape (Strickland et al. 2016).

plants, make pots, observe rituals, and bury their dead. This was no small achievement given that, while displacement did not mean abandonment, it often meant being cut off from good soils, marshes, rivers, hunting grounds, and known sources of clay. Today, the Pamunkey argue that "traditional subsistence in our Reservation lands sustained Pamunkey persistence despite the past 400 years," a fact of "tremendous importance to Pamunkey people" (Spivey 2017:1). The elements of this traditional economy have come to be seen as foundational to Pamunkey identity in the twenty-first century (Spivey 2017:2) and no doubt the other tribes.

Animal bone assemblages from post-1650 sites in Maryland indicate that indigenous diets changed relatively little through the seventeenth century. Wild resources formed the bulk of the diet at these settlements. At the Posey Site (1650-1680), located on Mattawoman Creek in Charles County, Maryland, and the Zekiah Fort Site (1680-1692), located in the interior upland of Charles County, deer provided the primary meat in the diet. Other animals include squirrel, turtle, and gar. Not surprisingly, more fish were recovered from the creekside Posey Site. European animals, including pig and cow, were also present at both sites albeit in small amounts. These animals, permitted to run loose at great detriment to Native gardens and crops, were often taken by Natives as part of a garden and crop management strategy (Landon and Shapiro 1998; Flick et al. 2012:159-166).

Few house patterns are known archaeologically for the post-1650 period. Wahunsenacawh had asked for and received a house in the English style at Werowocomoco in 1609. In 1620 or 1621, an English-style house was also built for Opechancanough by Sir George Yeardley's men (Smyth of Nibley Manuscript No. 43). The Mattaponi chief had asked for an English-style house at the place he and his countrymen had moved to on Piscataway Creek; as noted, this house was later set on fire by an English neighbor trying to drive the Mattaponi out. In 1653, Lancaster County's justices committed to building "an English house of this Country's fashion" for Towerzen, the Rappahannock weroance. A late seventeenth-century Native household site on Portobago Bay in Essex County yielded nails and small quantities of brick and window glass, possibly indicating a house in the English style.

English houses may have been an "exotic" acquisition and reserved for leaders as the documentary record seems to suggest. Other sources suggest traditional, loaf-shaped houses known as wigwams remained the norm. In 1698, when the Quaker missionary Thomas Story visited the Chickahominy Indians' town near modern-day Aylett, he said that it consisted of "about eleven Wigwams, or Houses, made of the Bark of Trees, and contained so many Families" (Story 1747:162-163). While visiting the upper reaches of the Mattaponi River in mid-November 1715 (more than 100 years after the arrival of the settlers), John Fontaine saw an Indian house close to the side of the road. Fontaine reported that it "was built with posts put into the ground, the one by the other, as close as they could lay, and about seven feet high all of an equal length." The house, Fontaine continued, "was built four square and [had] a sort of roof upon it covered with the bark of trees. They say it keeps out the rain very well." Fontaine went on to say the beds were mats made of bull-rushes with "one blanket to cover them." Household goods consisted of a pot (Fontaine 1972:85). When Rev. Andrew Burnaby passed through Virginia in 1759, he reported seeing Pamunkey Indians living in "little wigwams or cabins upon the river" (Burnaby 1775:29).

Augustine Herman's Map of Maryland and Virginia (1673) shows loaf-shaped Indian houses in 1670 (the year he conducted his fieldwork in the York valley). In 1670, Natives and planters were living in relatively close proximity throughout eastern Virginia (Figure 18). Herman identified the Claiborne patent near the tip of Pamunkey Neck on his map and he signified that a plantation seat was located in the vicinity of Sweet Hall. Upstream he labeled the site of "Cohoak." Further west and in the vicinity of the Pamunkey Indian Reservation, Herman sketched a cluster of Indian cabins, which he labeled "Pamaomeck Indian," a name and location similar to what Anthony Langston ([1662]) called "Pamamomeck," Totopotomoy's seat. Much further west, opposite the mouth of Totopotomoy Creek and near Goddins Island, was another Native community, which Herman labeled "Manskin Indian." It was at a site analogous to Anthony Langston's

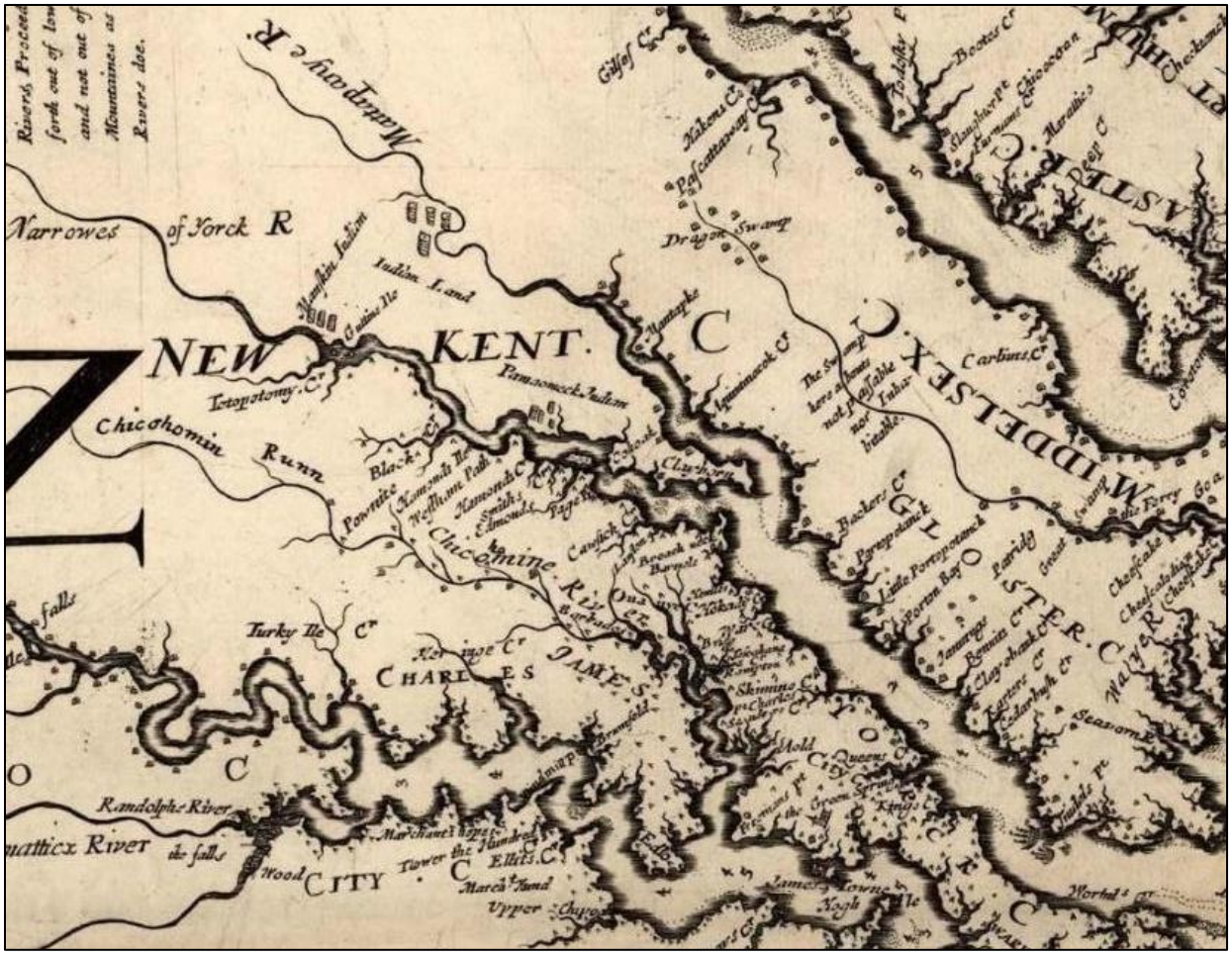

Figure 18. "Map of Virginia and Maryland" showing Indian-style houses in the Pamunkey and Mattaponi river valleys (Herman 1673).

"Indian Fort," near "Menmend," the late Opechancanough's seat. Across Pamunkey Neck and on the south side of the Mattaponi River, in the vicinity of Aylett, Herman showed another cluster of Indian cabins in territory labeled "Indian Land" (Cocke 1978:296; Nugent 1969-1979:II:228, 237, 241, 249, 273, 290).

The artifact assemblages recovered from post-1650 Native sites are typically characterized predominantly by Native ceramics, some lithics, and European trade goods. The persistence of ceramic production suggests that not only did Native women's knowledge of ceramic manufacture persist, knowledge of and access to clay sources also persisted. More importantly, Native households continued to use Native-made ceramics and, in fact, produced ceramics for the colonial market, a practice continuing into the nineteenth and twentieth centuries (Spivey 2017).

The numbers of lithics (stone artifacts) appear to drop after European settlement given Native access to iron tools, including axes, knives, scissors, and guns. The cutting and projectile properties of stone were more than matched by metal tools. The numbers of lithics had already dropped dramatically since about 1200 BCE as Native communities increasingly relied on domesticated plants for subsistence. Stone tools and stone debitage (waste flakes generated through the manufacture of stone tools) are found in post-Contact sites in smaller numbers, including gunflints and European flint flakes. Bottle glass fragments recovered from sites in Virginia and Maryland show clear evidence of flaking and include at least one

projectile point from the Rappahannock valley. Still, lithic or stone artifacts do not completely disappear from post-Contact settlements, with small triangular points used at the ends of bows often recovered.

Native agency is also seen in the kinds of European goods acquired and repurposed in familiar practices: guns for hunting and defense, European copper in lieu of Great Lakes copper, glass beads in addition to or in lieu of shell beads, and, as noted, bottle glass to make flaked tools. There is even evidence to suggest that religious meanings were assigned to seemingly everyday ceramics. Rhenish brown Bartmann stonewares with their distinctive face masks show up at post-Contact sites in Virginia, Maryland, and Pennsylvania, including (in Pennsylvania) in burials (Kent 1984; Webster and King 2018; King et al. 2016).

Trade remained an important component of Anglo-Native relations. In October 1677, the colonial assembly decided to establish marts or fairs in strategic locations where trade with the Indians would be conducted at specific times of the year. Trade marts were to last for 40 days and to be held twice annually. New Kent County's justices of the peace were told to select the place at which the York River's trade mart would be located. Their authority would have included trade with the tribes on the Pamunkey and Mattaponi rivers. Trading in that area was to commence on April 10 and September 10. Gloucester County's Chiskiack Indians were authorized to participate in a trade mart established at a site or sites selected by their local court justices (Hening 1809-1823:II:410-411). Little is known about these trade marts and none have yet been archaeologically identified.

European goods recovered from Native sites have captured researchers' attention for decades. Early studies suggested that Native acculturation could be measured by the proportions of European artifacts recovered from a site: the more European artifacts present in an assemblage, the thinking went, the more Anglicized the household or settlement (Quimby 1939; Quimby and Spoehr 1951). Recent scholarship, however, has called into question a simple one-to-one correspondence between artifact origin and social or cultural identity. As noted, European goods were often repurposed in Indian practices. In some cases, such as the ca. 1699-1712 Piscataway settlement on Heaters Island in the Potomac River in Maryland, an almost entirely European artifact assemblage more accurately reflects a displacement of a hundred miles from the homeland rather than assimilation or acculturation, making easily acquired European goods essential in a new land (Curry n.d.).

Archaeologist Stephen Potter (2006) has persuasively argued that the increasing availability of European copper and its rapid distribution beyond the immediate control of weroances in the Potomac River valley contributed to an erosion of chiefly authority. While this may have been the case for Virginia, a similar process does not appear to have been at work in Maryland, where the Calvert family structured trade through Native leaders (King et al. 2016). In Maryland, European goods recovered from Native sites are associated almost exclusively with Native leaders. Documents, however, do suggest that, by the end of the first century of occupation, at least some non-elite Native people carried spoons, pin cushions, and blankets, materials often curated by their Native owners for years. Whether or not Potter's hypothesis holds up for the York valley will require evidence from seventeenth-century sites in that region.

The preoccupation with Indian assimilation or acculturation (which can be read as forms of disappearance) overlooked English attempts to join Native society. In the earliest years of the colony, a number of settlers abandoned Jamestown, where conditions were often dire, to join Native communities. At least six or seven colonists went to Werowocomoco with this intention in mind, irritating Virginia's leaders. Nor was marriage or other relationships unheard of – in addition to the marriage of Pocahontas and John Rolfe, Englishman Colonel John West had a son with Cockacoeske, the "queen" or weroansqua of Pamunkey after the death of her husband, Totopotomoy. In 1656. Henry Spelman, one of the first settlers to Virginia and the person who related the story of Great Hare to William Strachey, married a Patawomack woman. Some reports indicate that servants had Indian mistresses residing at Indian towns (Smits 1987).

Estimating the Native Population in the York River Valley Through the Nineteenth Century

The U.S. Census estimates that approximately 250 people or 1.6 percent of the total population in King William County self-identified as Native American (or Native Alaskan) in 2018 (based on 2010 data). No doubt the majority of these individuals are members of the Pamunkey, Mattaponi, or Upper Mattaponi tribes.

Earlier censuses, which relied on the judgment of census takers and were often bound by legal restrictions on how individuals were racially defined, probably undercounted Native people. In these cases, census takers often identified Native people as "Negro" or "colored." These identifications are not inadvertent, with English people using these undercounts to claim Native populations were "dwindling" or disappearing and should get out of the way of colonial and nineteenth-century land speculators.

A 1705 law codifying the status of enslaved Africans as property also deprived Indians of legal rights they had formerly enjoyed. Under the 1705 legal code, Indians and other non-whites were forbidden from testifying in court under any circumstances, a prohibition that prevented them from collecting debts. Likewise, Indian servants could no longer sue for their freedom if their masters detained them after their contracts expired. Bans against inter-racial marriage made it illegal for ministers to unite whites and non-whites. Those who wed despite the law were fined and subject to imprisonment of six months. Non-whites were ineligible to hold any public office (civil, ecclesiastical, or military) and if they dared to forcibly oppose a white Christian, they could be flogged. Thus, 1705 brought a profound erosion of the few rights Indians had enjoyed in their occupied territory.

Estimating population counts from documents other than a census can be difficult. Estimating populations from Smith's reporting is especially fraught with difficulty. Smith, who estimated warrior counts associated with towns he mapped, was limited in the places and people he could see, not only because of time-of-year constraints but because of the sheer amount of territory he was attempting to inventory. In areas where rivers were narrow, Smith tended to see more settlements than in areas where rivers were wide. If he stayed close to one side of a river, he might miss activity on the opposite side. Further, Smith was only interested in warrior counts; if Native warriors made themselves invisible to Smith, as they were perfectly capable of doing, Smith would have undercounted.

While Smith's numbers are probably not accurate, they may still be useful as indicators of *relative* population density. Turner (1976:97) attempted to derive population estimates for the Virginia Tidewater Algonquians using Smith's warrior counts as well as warrior counts provided by colonist William Strachey. Turner used a conversion figure of 4.25 individuals per warrior. His estimated population counts for the York, Pamunkey, and Mattaponi river valleys are shown in Table 5.[34]

Group	Estimated Population
Youghtanund	400
Pamunkey	1,500
Mattaponi	360
Werowocomoco	200
Chiskiac	210

Table 5. Population estimates of Indian people in the York River valley (Turner 1982).

For the entire Virginia Coastal Plain, Turner (1982:45, 160) estimated a total population of 12,940 persons,[35] with an estimated population density in the York drainage of 105 people per 100 square kilometers. This population density was one of the highest in the Chesapeake Tidewater. If Turner's estimates are faulty based on the problems with Smith's warrior counts, they nonetheless suggest that the

[34] The table omits Orapaks and Chickahominy because they are in the James River drainage. Turner (1982:51) estimated a population of 210 persons for Orapaks and 1,500 for Chickahominy.

[35] Turner (1982:45) reviews the estimates of other researchers, which place the Powhatan chiefdom between 9,000 and 14,300 persons.

York River valley, including the Pamunkey and Mattaponi valleys, was an area where the Native population was relatively denser than elsewhere in Virginia.

In October 1669, some 60 years after Smith's voyage, a census made of the colony's Indian population identified five Native groups living in New Kent County, which then encompassed land now within the boundaries of King and Queen and King William counties. Of the enumerated bowmen (the only ones included in the census), there were 20 Mattaponi, 60 Chickahominy, 50 Pamunkey, 30 Rappahannock, and 40 Totachus. Using Turner's conversion figure of 4.25 per bowmen, the total population for the Mattaponi would have been 95 persons and for the Pamunkey 213 persons.

A survey of the Native population was ordered in 1696 but as of 1697 had not been done. The purpose of the survey (as noted previously) was to assess the extent of Native claims in preparation for surveying the College of William and Mary's charter lands in Pamunkey Neck. The survey was eventually done and, on July 8, 1702, an official report sent back to England stated that 50 Pamunkey Indians and 30 Chickahominy were then living within the York River drainage (Colonial Office 5/1312 Part II:221-222). Using the conversion figure of 4.25 persons per bowman, the Pamunkey population, while dramatically smaller than in 1607, had increased ever so slightly from 1669. Conspicuously absent are references to the Mattaponi. Woodard and Moretti-Langholtz (2017:25) note that the "name of the Mattaponi people was omitted from public documents for nearly a century," cautioning that this should not be read as evidence that the Mattaponi had somehow disappeared.

In 1704, Robert Beverley II reported that the Pamunkey then had only 40 bowmen (or 170 people using Turner's conversion figure), "who decrease." Beverley indicated that the Chickahominy, who were also in King William County, had approximately 16 bowmen, having "lately increas'd." He noted that, "The English have taken away great part of their [the Indians'] Countrey and consequently made everything less plenty among them" (Palmer 1968:I:184-185; Beverley 1947:232-233; McIlwaine 1905-1915:1702-1712:121).

In 1727, Governor William Gooch estimated that the Pamunkey Indian tribe consisted of only ten families. He informed his superiors that the tributary group were "inconsiderable and withall so divided among themselves that they seem rather to want our protection than to seek to give us any umbrage." In 1734, the Council decided to discharge its Indian interpreters, "their service being of little use, seeing the Tributary Indians understand and can speak the English language very well" (Sainsbury et al. 1964:20:89-90; Hening 1809-1823:IV:46).

In 1781, Thomas Jefferson (1954) described the Pamunkey Indians as "reduced to ten or twelve men, tolerably pure from mixture with other colours." Jefferson noted that "the older ones among them preserve their language in a small degree, which are the last vestiges on earth, as far as we know, of the Powhatan language. He estimated their total population at 100 persons. Jefferson noted that the Mattaponi population consisted of three or four old men who were living "on the river of their own name, and have from time to time been joining the Pamunkeys from whom they are distant but 10 miles" (Jefferson 1954:96).

In 1850, Henry Howe reported that there were two Native groups then living in King William County. He reported approximately 100 people on the Pamunkey Reservation land, then called Indian Town. As for the Mattaponi, he noted the tribe was "now dwindled down to only 15 or 20 souls" (Howe 1969:349-350). Howe failed to take note of the small band of 10 or more Indian families that by the 1850s were known as the Adamstown Indians, the forebears of today's Upper Mattaponi tribe (Wood 2006:45).

In 1889 and 1893, ethnologists from the Smithsonian Institution reported a resident population of 100 people for the Pamunkey Reservation (Pollard 1894:10, 12, 16; Rountree 1990:202-203; Wood

2006:45). In 1907, ethnologist James Mooney estimated a population of 150 Pamunkey, 40 Mattaponi, and 40 Upper Mattaponi (Mooney 1907:151). When Frank Speck (1928:249) visited King William County ca. 1919, he estimated a population of 150 Pamunkey and 75 Mattaponi. Speck recognized the Native diaspora, noting 30 Pamunkey and six or so Mattaponi lived elsewhere.

Post-Colonial Life

Buck Woodard and Danielle Moretti-Langholtz (2017:33) consider the second half of the eighteenth century an important watershed moment in Native history. Through the seventeenth and into the early eighteenth century, they argue, Native people adapted English or European materials to "accommodate Indian aesthetics and cultural practices." As noted in an earlier section of this chapter, archaeological evidence bears out this observation. Indeed, hunting, fishing, ceramic and basket manufacture, and the making of dugout canoes, all practices maintained throughout the colonial occupation, continued well into the twentieth century. The change, as Woodard and Moretti-Langholtz (2017:34-35) describe it, is a perceptual shift to a growing participation in the market economy. This shift is documented in more detail in Ashley Atkins Spivey's (2017) doctoral dissertation.

To be sure, Natives and Europeans had been engaged in trade and exchange since at least 1607. On several occasions, the Pamunkey queen and Great Men complained to government officials that some of their tribe's members were unavailable to work because they were involved in occupations among the English. They claimed that George Tawhaw[36] was at Captain Thomas Terry's, Tom Rosen was at Thomas Pea's, and Parrahoa and Indian Robin were at the home of Henry Fox. Robin petitioned the Virginia Council for the right to stay where he was, as he had been instructed in a trade and wanted to remain near his customers (McIlwaine 1925-1945:III:198, 226, 287-288).

By the third quarter of the eighteenth century, however, a significant number of Pamunkey provided services and goods for people beyond the tribe. Men's "employment [was] chiefly hunting and fishing for the neighboring gentry," a hybrid practice that transformed traditional activity into an important component of the colonial economy. Indian vendors supplied meats, produce, ceramics, and baskets to their neighbors and to merchants and tavern keepers in Williamsburg and Yorktown. Pamunkey women were hired by Daniel Parke Custis,[37] who lived at White House, a farm adjacent to the Reservation, to make clothes for his enslaved labor force. This integration with the dominant economy continued into the nineteenth century. Mattaponi men, for example, (and no doubt Pamunkey as well) worked as fisherman who sold their catches "in Richmond and the regions round about" (quoted in Woodard and Moretti-Langholtz [2017:52]).

Rather than disappear, Native people survived and adjusted to the colonizers' legal and economic framework, even supporting it as evident by their service in the Revolutionary War. Pamunkey men fought in the American Revolution when other Native groups sided with the British or stayed out of the conflict altogether.[38] One of these men, Robert Marsh, became a prisoner-of-war in Charleston, South Carolina along with Catawba soldiers. Robert and his wife, Elizabeth, also Pamunkey, later moved to the Catawba community, where Robert served as the community's Baptist minister. John Collier, who is considered a "historical member" of the Pamunkey, also served in the American Revolution. His wife, Jenny, followed her husband to war and did laundry for officers. In many ways, this was an extension of tributary tribes' service to colonial authorities in the seventeenth century and, before that, representative of diplomatic and

[36] Woodard and Moretti-Langholtz (2017:40) have suggested that members of the Tawhaw family, including George and William, represented a faction within the Pamunkey. Some of these divisions may have developed over disagreements about the disposition of land.
[37] Custis was the first husband of Martha Washington.
[38] The Pamunkey also served in the Civil War supporting the Union Army (Spivey 2017:79).

wartime alliances before the arrival of the Tassantasses (Spivey 2017:45; Woodard and Moretti-Langholtz 2017:41).

While the pernicious effects of European colonialism on Native communities are undeniable, Spivey (2017:55) has pointed out that "colonialism should be understood as a process where Indigenous communities reference their deep-seated systems of knowledge to structure responses to colonial expansion and interaction." These responses reflected, in the case of the Pamunkey, "persistence, survival, and continuity as they adapted traditional subsistence practices into marketable industries, services, and sellable objects." These adaptive skills translated into a materiality of life that would have appeared "assimilated" or "acculturated" to Ian Quimby, the archaeologist who thought that assimilation could be measured by the number of European artifacts an Indian was using. Mid- to late eighteenth-century archaeological assemblages include brick, nails, window glass, locks, and keys, for example, suggesting dwellings more European in form and appearance. Instead, Spivey argues, these adoptions should be understood as strategies serving cultural persistence. Spivey's observations are equally applicable to the Mattaponi, the Upper Mattaponi, and no doubt the many other Native groups residing in the Chesapeake.

Religion also served an important part in the ability to survive. At the end of the seventeenth century, Native boys, including Pamunkey boys, were sent to the College of William and Mary in Williamsburg where they were to receive a Christian education. While Christianity was structurally different than Native religions,[39] the conflation of political and religious leadership in Native communities was not new. Wahunsenacawh, for example, served as both a political and a spiritual leader imbued with "manitou," or spiritual life force. An education at William and Mary not only introduced Native children to Christianity, it imparted knowledge about English laws and structures, knowledge Native people could use to protect their status.

But Native allegiance to the Anglican Church, even with an education from William and Mary, was not set in stone. The growing Baptist movement at the end of the eighteenth century made significant inroads throughout Virginia, including among Native people. Itinerant preachers visiting Chickahominy and Pamunkey found receptive audiences. The Bradby name, found today among the Chickahominy, is derived from one of these preachers who married into the community. Perhaps the Baptist emphasis on the importance of the congregation, including as a source of ministers, and on self-governing may have been more attractive to Native people than the rigidly hierarchical structure of the Anglican church.

After the Revolution, Woodard and Moretti-Langholtz (2017:39) note that "Indian support for the Baptist movement grew," in part because of the disestablishment of the Anglican Church in the new republic. Indian surnames are prominent among those who organized the Upper College and the Lower College Baptist churches. Other names are missing, including families whose sons attended William and Mary. These families may have remained Anglican or, as Woodard and Moretti-Langholtz (2017:40) suggest, their absence may reflect tribal divisions.

The Lower College Baptist Church became the Colosse Baptist Church by 1835. Colosse Church was located off both reservations on the road that is today SR 30. By the mid-1850s, interest was developing in forming a church at Pamunkey. In 1859, a Colosse minister held services at Indian Town (the Pamunkey Reservation) and, in 1866, the Pamunkey Indian Baptist Church was formed. The church building dates to 1865. Religious services were also held in dwellings. In the early twentieth century, the Mattaponi built a wooden pavilion that extended into the river and this space also served as space for church meetings, a juxtaposition Woodard and Moretti-Langholtz (2017:84) indicated a "religious orientation to the river." Similarly, the Upper Mattaponi have a place on the river where baptisms take place.

[39] Christianity depends on revelations by a priest class (Thornton 1998).

The Mattaponi Baptist Church organized in 1932, a landmark event for tribal members. Woodard and Moretti-Langholtz (2017:84) captured the enthusiasm an elder expressed when describing the church's acceptance into the Dover Baptist Association, a resource organization for Baptist churches in this part of Virginia. "Dover accepted US! We were accepted by the Whites, without having to prove who we were or be degraded" (emphasis original). By 1935, a new dedicated church building had been completed and a Mattaponi member was serving as pastor.

The Upper Mattaponi organized and built their church, Indian View Baptist Church, in 1942. The church began as a Sunday school in 1920, with the school held in the Sharon Indian School. Indian View was closer to home. Before then, Upper Mattaponi members attended church on the Pamunkey or Mattaponi reservation. Mr. Lee Henshaw donated the land (Faulkner n.d.). The church is active with a revival in August. They serve the greater community through projects such as the collection of food and supplies for hurricane ravaged communities.

Still, the prejudice and discrimination the Pamunkey, Mattaponi, Chickahominy, and other Native people experienced through the eighteenth century continued into the nineteenth century where racial ideologies operated to conflate all people of color and erase any other identity. Spivey (2017:81) notes the impact of Nat Turner's Rebellion in 1831, an event that frightened the white Virginia oligarchy. Spivey links the failed uprising to a petition submitted in 1836 to the Virginia Assembly to remove the Pamunkey from their Reservation. The Pamunkey and no doubt members of the other King William Indian communities were not allowed to travel without "free papers" issued by the Reservations' trustees. After more than two centuries, white anxiety about Native people remained high.

Even the Pamunkey Reservation's trustees could not be fully trusted to have the best interests of Native communities in mind. In 1812, one of these trustees, John Hill, sought permission from the county justices to condemn an acre of ground on Indian Town Creek – near the Mattaponi – for use as a mill seat. On July 23, 1812, a jury appointed to investigate Hill's request recommended that one acre of high ground and one-third acre of low ground should be bought from the Mattaponi Indians. When contacted about the proposed mill seat, however, the Mattaponi informed the county court that they were under the jurisdiction of the state rather than the county. Hill subsequently petitioned the legislature to allow him "to abut his dam to [the] land & acquire 1 A. as well." Although the assembly approved Hill's petition, the law that would have allowed him to take an acre of the Mattaponis' land did not pass (Rountree 1990:166; King William County Legislative Petitions, December 1, 1812).

During the early 1840s, the landholdings of the Pamunkey and Mattaponi Indians were again threatened when a group of King William County freeholders submitted a petition to the General Assembly, asking that the Indians' acreage be sold. They indicated that the tract located on the Pamunkey River contained around 1,500 acres and the one on the Mattaponi River less than 100 acres. The petitioners said that the people occupying the two parcels were racially mixed and largely of African descent. The freeholders seeking to acquire Pamunkey land were now not only using a (familiar) racial argument to dispossess the Pamunkey of their land, they were questioning the identity of the people claiming to be Indian. The petitioners' request was denied (King William County Legislative Petitions, November 26, 1842; January 20, 1843).

During the 1850s, plans were developing to build a railroad between Richmond and West Point, linking overland and seagoing commerce and providing a direct link to urban markets and wage jobs. The Richmond and York River Railroad, as the rail line was called, opened in March 1861. With the Civil War just beginning, the train eventually transported supplies for the Confederacy. The line was interrupted, however, when Union troops disabled the tracks in 1862. After the War, the railroad was rebuilt and the line reopened in 1867 (Burgess and Wood 1968:148). The railroad track cut through the Pamunkey Reservation with a stop at nearby Lester Manor. The railroad and the economy together created conditions

for an emerging Native diaspora as Pamunkey, Mattaponi, and Upper Mattaponi went to Richmond and other cities in search of economic opportunity.

Tidewater's isolation at the beginning of the nineteenth century – most Virginians were fleeing what they saw as exhausted farms for lands opening to the west – became a "key element in the homestead and subsistence-based livelihood" characterizing Pamunkey and no doubt Mattaponi and Upper Mattaponi life in the nineteenth century (United States Congress 1832:160-161). The nineteenth century was also the period when a nation of predominantly rural farmers became a nation where industrial capitalism ushered in profound changes. On the Pamunkey Reservation, a new seasonal round became part of this transformation. Fishing, hunting, trapping, craft production, and farming took place from spring to fall both on and off the Reservation as Indian men were hired as hunters and guides. Kinship and gender continued to play important roles in the transmission of traditional knowledge. Hunting territories on the Reservation were assigned to an individual male tribal member through a bidding system. The same territory would be divided up for purposes of trapping animals. To insure no overhunting or overtrapping, the Pamunkey developed a cycling system to allow animals the opportunity to regenerate. The Tribal Government continues to manage these leases. During the spring, fish catches were sold to urban markets. During the winter months, migratory wage labor in urban areas, especially Richmond and Petersburg, provided income.

As the Richmond and York River Railroad became the link providing Pamunkey men with direct access to urban markets, ceramic production – done predominantly by Pamunkey women – was negatively impacted as mass-produced ceramics became more readily available. The Pamunkeys' customers, including King William County residents, could acquire ceramics from farther away more cheaply and more readily, as could Pamunkey women themselves. By 1878, only one or two potters were active (Speck 1928:408). Pamunkey women adapted by shifting gears and producing pots for the tourist market emerging at the end of the nineteenth century and beginning of the twentieth. By the time anthropologist Frank Speck arrived at Pamunkey in 1919, a number of women on the reservation were engaged in ceramic production (Spivey 2017:208). Speck (1928:406-407) described the process of manufacture and ceramic vessels made by the Pamunkey for the Smithsonian Institution for the World's Columbian Exposition.[40]

Frank Speck was not the only or even first anthropologist to visit the Virginia Indians. The end of the nineteenth century had seen the emergence of anthropology as a discipline. James Mooney and J.G. Pollard, both of the Smithsonian Institution's Bureau of American Ethnology, and Albert Gatschet, an ethnologist studying Native languages, visited the Pamunkey reservation between 1889 and 1893. Gatschet had observed in 1889 that some of the women living on the Pamunkey Indian Reservation were still making pottery, but that the mass-production of ceramics had led to the industry's decline. By 1893, Pollard reported that traditional Pamunkey crafts had died out and no artisans were present. A general store Pollard saw on the reservation may have been the retail establishment the tribe started in 1875. This store may have been the location where mass-produced ceramics were acquired.

The ethnologists recorded that, in 1889 and again in 1893, the Pamunkeys had a residential population of around 100 people inhabiting 27 frame dwellings scattered in open fields. An additional 20 people lived off the reservation in the surrounding neighborhood. The ethnologists did not seem interested, however, in the growing diaspora.[41] They reported that the Pamunkey Reservation consisted of around 800 acres, 250 of which were arable. The property was connected to the mainland by a narrow strip of land. The finest structure on the reservation, at least according to one of the ethnologists, was the Baptist church, which was supported by the tribe collectively (Pollard 1894:10, 12, 16; Rountree 1990:202-203; Wood 2006:45).

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[40] Held in 1893 to commemorate the four-hundredth anniversary of Columbus's voyage to the New World.

[41] This was the period in anthropology when researchers sought evidence of earlier Native cultures by searching for "survivals" among living groups.

At the close of the nineteenth century, Pamunkey men were employed as professional hunters, fishermen and trappers. Pamunkey men continued to serve as guides to outsiders who preferred to hunt on the reservation. Each family on the reservation had approximately ten acres of land, only part of which was tilled, with forests covering the remainder (Rountree 1990:202-203). Mooney reported in 1907 that the Pamunkey "derive their living almost entirely from the water, taking large quantities of herring and shad by seine, according to the season, with ducks, reedbirds, and an occasional sturgeon for disposal to Baltimore commission houses." They hired local African Americans to labor in their fields of corn and beans. For their part, he noted, the Mattaponi "live principally by lumbering and farming," neglecting to mention fishing (Mooney 1907:147-148).

During the late nineteenth century, the Commonwealth of Virginia appears to have treated the Pamunkeys, Mattaponis, and Upper Mattaponis as a single tribe bearing the Pamunkey name, and the only local school available to Indian people throughout the county was on the Pamunkey Reservation. The Mattaponis began to reassert their own identity in the early 1890s and, in 1894, the Mattaponi were legally considered separate from the Pamunkeys. That same year, Virginia's legislature passed a law designating trustees for the Mattaponi Indian tribe, "formerly known as a branch of the Pamunkey Indian tribe." The new law made provisions for the tribe to deal with unwanted people on their reservation. The Mattaponis created their own bylaws and, in time, had a school on their reservation. At the same time, the Upper Mattaponi formulated a request for federal funds that could be used for education (Rountree 1990:211, 215; O'Bannon 1894:973-974; 1896:922-923; Wood 2006:45).

Ashley Atkins Spivey, a Pamunkey Indian and anthropologist who has studied Pamunkey life in the nineteenth and twentieth centuries, describes an economic seasonal round for the nineteenth-century residents of the Pamunkey Reservation. Traditional subsistence practices based in the Reservation landscape were supplemented with wage labor earned by tribal members in urban areas. By the twentieth century, however, wage labor was becoming the primary means by which Pamunkey residents earned a living. Traditional subsistence practices, especially hunting and fishing, continued but in a supplemental role. This transition accelerated after World War II as "Pamunkey people increasingly navigated outside of the Reservation to engage the market." The York River tribes, like people in many rural locations, became a part of the twentieth-century migrations to urban industrial locations (Spivey 2017; Littlefield and Knack 1996). For the Virginia Indians, urban markets presented not only opportunity for economic advancement but an escape from the Jim Crow and racial legislation emerging in Virginia at the end of the nineteenth and beginning of the twentieth century. The impact of this legislation is dicussed below.

Spivey found that, during this period, a tension developed between some Pamunkey and their attitude to the Reservation. She quoted one informant relating a story about her mother, believing that the Reservation "was something to hold you back…" (Spivey 2017:297). One result was the creation of a Pamunkey diaspora, including in Philadelphia. Many ex-pat Pamunkey worked blue-collar jobs, but at least one owned a moving company and helped to bring more Pamunkey to Philadelphia. A viable Pamunkey community had been established in the City of Brotherly Love by the 1920s and members were experiencing economic success.

The Pamunkey diasporic community in Philadelphia was informally known as the "Indian village," but Pamunkey informants reported that "you didn't tell people [outside the community] you were Indian." Instead, Pamunkey traveled back to the reservation several times a year, where they could "fully express" their Native identity. Events around which these trips were organized included an August homecoming held at the Pamunkey Indian Baptist Church and visits during the November hunting season. Ex-pat Pamunkey would also send money back to family members on the Reservation (Spivey 2017).

The Right to Self-Identify

Notions of human difference grounded in, initially, religion and then biology have been a part of modern colonialism. Since the seventeenth century and spurred on by the "rational thinking" of the Enlightenment in the eighteenth century, western thinkers sought to explain difference in what soon became a racialized hierarchy based primarily on physical appearance. As early as 1705 in Virginia, intermarriage between Native people and "Whites" (Europeans) was made illegal. At the same time, the damage done by disease and dispossession gave birth to a trope of Indian disappearance and the damaging notion that Indians (and other people of color) were incapable of managing their own affairs. Native history, including Pamunkey, Mattaponi, and Upper Mattaponi history, is replete with examples of such prejudices persisting into the twentieth century.

Racial laws were nothing new in seventeenth-, eighteenth-, and nineteenth-century America. By the end of the nineteenth century, however, the Lost Cause movement, a movement ostensibly about the reconciliation of North and South after the Civil War, implemented that reconciliation through legal acts enshrining white supremacy. In Virginia during the 1890s, the Conservative Party gained control of the General Assembly, paving the way for sweeping changes, including racial segregation and purportedly "separate but equal" facilities. Soon, legally-mandated segregation permeated every domain of life and was applied not only to public facilities, but also privately-owned business establishments, such as restaurants, hotels, and hospitals. In 1901-1902, delegates at a state constitutional convention even considered how to restrict black voting rights without violating the Fifteenth Amendment to the United States Constitution. The 1902 state constitution, which was in effect until July 1, 1971, legalized racial segregation in public schools, which already existed on a de facto basis (Katz 1969:237-242, 244).

The Jim Crow era, as the period from the end of Reconstruction until the beginning of the Civil Rights movement is often called, brought a new set of challenges to Virginia's Indian tribes. Perhaps one of the most racially destructive laws of the twentieth century, Virginia's Racial Integrity Act, went to the core of who would determine a person's identity and how they would do it. The law banned interracial marriage and required racial identifications on birth and marriage certificates. The law's supporters were convinced that no Indians survived in Virginia (perhaps with the exception of Pocahontas's descendants). Therefore, the law required Indians to identify as colored. No one identified as "white" could have a trace of African ancestry. These laws legally eliminated the identity of Virginia Indians as a people, a final act of dispossession, in this case, of identity.

Walter Plecker, the registrar for Virginia's Bureau of Vital Statistics, zealously enforced the new law and used it to foster racial prejudice, a legacy still with us. Plecker gathered information from Virginia's counties and used federal census records to determine identity. As Bureau head, he instructed county clerks of court to eliminate the word "Indian" when compiling new records and to change or eliminate the term "Indian" in older records. King William County's clerk, perhaps because of his familiarity with his Pamunkey neighbors, ignored the directive, although most other county clerks conformed. Beginning in 1924, the year the Racial Integrity Act was passed into law, birth certificates commenced identifying Indian babies as "colored." The issue was a source of great contention when World War II came along, with Rappahannock Indian men refusing to register for service if they could not identify as Indian. The men were ultimately designated conscientious objectors and sent to Vermont to work in a hospital. When University of Pennsylvania anthropologist Frank Speck became aware of Plecker's stance and the damage it was doing to Native people, he began working to counteract it (Rountree 1990:219, 222-224).

Tribal resistance to the Racial Integrity Act took many forms. After its passage in 1924, a majority of younger Pamunkey left Virginia and moved to Philadelphia, to a section of the city that came to be known as "Indian Town" (Spivey 2017:304). Tecumseh Deerfoot Cook was one of these emigrants, who, after marrying in 1925, left the reservation for Philadelphia but eventually returned and served as chief from

1942 until 1984. Chief George Major Cook, who served as Pamunkey Chief from 1902 until his death in 1930, opposed the Racial Integrity Act through a major lobbying effort that consumed him. An amendment introduced in 1930 would have allowed Reservation Indians to identify as Indian, but those who left the reservations would no longer be protected and so the Pamunkey refused to support the amendment. The fight took a toll on Chief Cook, who died soon after in 1930 (Watkinson 2014).

The Racial Integrity Act, which was declared unconstitutional in 1967, left a damaging legacy that haunts the twenty-first century. In the struggle for the right to self-identify, Virginia's tribes were forced to "sacrifice both family ties and good will in the African-American community by refusing to attend Jim Crow schools." Also at stake were the limits to opportunity that were placed on people of color. The legal doctrine of separate but equal was usually anything but. Laws like the Racial Integrity Act pitted communities against one another in an effort to shape racial decision-making. This racist legacy is still evident in many places and attitudes.

During the late nineteenth century, the Upper Mattaponi found a building that could serve as a school. When the school closed because of a lack of students, children commuted to the school at Pamunkey or received no formal education. In 1919, the Upper Mattaponi built a small one-room school, a facility they used until 1952 when they erected a brick structure adjacent to the original frame building. The brick schoolhouse, known as the Sharon Indian School, closed in 1965 when schools were desegregated. The Sharon Indian School is now listed on the National Register of Historic Places. It is still used for tribal meetings and other types of tribal gatherings. The Upper Mattaponis had a church of their own by 1942, the Indian View Baptist Church. Although they lack a reservation, they own land as a tribe.[42] They put on an annual pow-wow, which is open to the public (Rountree 1990:215; Wood 2006:45).

The Pamunkey Indian Reservation, today including approximately 1,200 acres, is listed on the National Register of Historic Places and is also a National Historic Landmark. During the 1980s, the reservation was home to approximately 50 people, exclusive of school children. Each autumn the Pamunkeys present an annual tribute to Virginia's governor. The church (built in 1865 and the oldest Indian church in the state) and a museum (erected in the late 1970s and modernized more recently) are the main public buildings on the reservation. The late nineteenth-century school, where grades 1 through 7 were taught, eventually saw use as a trading post and more recently was converted to use as a storage facility. A Tribal Council complex is considered one of the most important buildings on the reservation. There also is the Pottery School, which the Pamunkey Indian Potters Guild has occupied since the 1930s. The Pamunkey shad hatchery fosters the preservation and restoration of the American shad.

Pamunkey descendants, who are recognized by the tribe as eligible for membership, are able to procure land on the reservation. Pamunkey-descended women whose husbands are white are an exception. Those whose requests for land are approved must commence construction on their property within two years. Landholders' widows have life-rights to their late husbands' plots, but offspring must apply anew. Forested areas and marshy habitat are divided into hunting territories that are assigned every fall via a bidding system. There is shad fishing in the spring and small houses (or fishing shacks) along the periphery of the shore line now serve as vacation cottages. The Pamunkeys are governed by a chief and seven council members who stand for election every four years. These officials perform all tribal governmental functions encompassed by their laws and they administer them. Today, the Pamunkey are a federally recognized tribe (Rountree 1990:255, 257; Wood 2006:41, 51).

[42] The Upper Mattaponi are believed to be descendants of Chickahominy Indians who sought refuge in the Mattaponi drainage in the mid-seventeenth century. The Chickahominy had a reservation in the area where the Upper Mattaponi are now located.

The Mattaponi Indian Reservation now encompasses approximately 150 acres. The reservation is densely populated with a waiting list of those wanting land. Many of the people who reside on the reservation commute to jobs elsewhere, and some own non-reservation land that is nearby. Dwellings on the reservation include frame houses and mobile homes, complete with modern improvements, and there is a housing code. Although the reservation is crowded, there is room for kitchen gardens. Public buildings on the reservation include a church (established in 1932), a museum, and an educational trading post, where instruction is offered about Indian culture. There also is a fish hatchery and a marine science facility that supports the Mattaponis' work with American shad. The tribe's governing body consists of a chief, assistant chief, and seven councilmen. Every fall, the Mattaponi also pay tribute to Virginia's governor. While the Mattaponi Reservation is not listed on the National Register, a survey completed in 2017 identified five domestic residences, the Mattaponi Indian Baptist Church, the Mattaponi Indian School, the fishing shore and wharf landing, fishing shanties, and shad hatcheries as important cultural resources and potentially eligible for listing in the National Register of Historic Places (Rountree 1990:259-261; Wood 2006:34; Woodard and Moretti-Langholtz 2017).

The Upper Mattaponi are a "non-reservated" tribe, having lost their reservation land in the colonial period. Both Speck (1928) and Rountree (1990) link the Upper Mattaponi most closely to the Chickahominy but the reality is that, given the amount of mixing of tribal groups, the Upper Mattaponi no doubt have Pamunkey and Mattaponi ancestry and vice versa. Known in the nineteenth century as the Adamstown Indians, the tribe incorporated as the Upper Mattaponi in 1921. At the time, the Upper Mattaponi had been leading an effort to have a school for Indian children in King William County, but the request was denied. In 1917, the tribe built its own school, the Sharon Indian School, a frame structure that stood until 1964 and was replaced by a brick schoolhouse built in 1952. The brick schoolhouse and the site of the 1919 schoolhouse are listed in the National Register of Historic Places (Ernstein et al. 2006; Adams 2014).

Coda

In his book on Werowocomoco, Martin Gallivan (2016:5) suggests that Werowocomoco might be thought of as a "nonplace," a "once-powerful town … enmeshed in a network of meaningful Native places … [now] disconnected" from the modern heritage industry. It may be significant that, during this project, the tribal members participating in the driving tours chose places closer to home to visit; places deeply imbued with nineteenth- and twentieth-century memory and not the memory that so many Americans associate with the Powhatan Indians, including the story of Pocahontas's rescue of John Smith.

This experience contrasts with that described by Gallivan, Moretti-Langholtz, and Woodard (2011), who observed members of Native communities use a "strategic essentialism" to connect their presence to nationally-known stories. To do this required an approach that imagines tribal boundaries as fixed and unchanging from the initial occupation of Tsenacomacoh in 1607. Connecting with a history that set in motion a relentless and racially-based effort to dispossess Native communities and nations served to provide an authority so long denied to Native people. Not far from Virginia's "Historic Triangle," Werowocomoco serves as a tangible reminder of all that was done.

This construction of memory may be part of what Native American scholar and critic Gerald Vizenor (2008) describes as "survivance," or an active process of resisting colonial histories that treat Native people as having disappeared, as victims, and, in Virginia, as something else/not Indian. Survivance is about reclaiming historical presence and agency through new and critical ways of reading and interpreting documentary and archaeological evidence and it is also about deciding what stories are or are not remembered (Vizenor 2008).

The Pamunkeys' and Upper Mattaponis' focus for this project on their living communities, including a relatively recent past, serves as a form of taking charge of the history-telling process. Much remains to be uncovered and documented about this recent past, particularly an incredible story of survival.

CHAPTER IV
INDIGENOUS SETTLEMENT MODELS OF THE CHESAPEAKE BAY REGION

CHAPTER HIGHLIGHTS

- This chapter reviews previous research concerning the development of settlement models in the Chesapeake Bay region and their applicability to the greater York River valley.
- Settlement models, or "predictions" of how people have distributed themselves across a landscape, are critical for understanding how Native people in the York, Pamunkey, and Mattaponi river valleys understood and lived in their landscape.
- Settlement models are typically developed from ICL criteria including proximity to waterways, fresh water, marshes, and well-drained, level, and sandy soil.
- Shifts in settlement strategies to centralized, semi-permanent habitation or residential places is evident beginning ca. 500 CE and intensifying ca. 1200 CE.
- A "seasonal round" is evident in the archaeological record, with late Spring through early Fall spent in centrally located villages/towns and late Fall through early Spring spent in dispersed camps involved in large deer hunts.
- The rise in maize-based agriculture after ca. 900 CE becomes tied to increased settlement size.
- Werowocomoco, "a persistent place" with both political and religious significance, included "chiefly" architecture delineating political and religious spaces of importance, including large trenches and longhouse, perhaps occupied by Wahunsenacawh.

There are a number of ways by which researchers have attempted to model the settlement of indigenous people in the Chesapeake and other Algonquian-speaking regions. Studies of the Middle Woodland (500 BCE-900 CE) and early Late Woodland (900-1200 CE) periods in both Maryland and Virginia have shown that these centuries were a transitional period of increasing sedentism (living in one place for periods at a time), population growth, and the apparent emergence of larger group territories, economies, and polities. These changes may have been spurred by better access to reliable food sources, including corn, which appears to have arrived in the region ca. 900-1000 CE (Sperling 2008:24). A growing dependence on domesticated foods requires different social and decision-making structures for ensuring adequate food supplies, including rules to distribute food surpluses and the ability to store resources for future use, including subsurface pits, ceramic pots, or above-ground granaries. Availability of resources appears to be the major contributing factor to this transition and many archaeologists see an important shift in the archaeological record ca. 900 CE, with Native communities entering a different phase of development known as the Late Woodland.

Archaeologist Martin Gallivan (2003) has challenged the common understanding that there was a sudden and dramatic shift toward greater sedentariness in the early part of the Late Woodland, or at the Middle-Late Woodland break (ca. 800-900 CE). Gallivan argues that sedentary practice at the beginning of the Late Woodland period differed only slightly from the end of the Middle Woodland period. Examining site population density and duration of occupation through an examination of house patterns and ceramic discard, Gallivan found that it was only after 1200 CE (and not after 900 CE) that more permanent and substantial settlements appear in the archaeological record, at least in the James River valley.

Gallivan's observations accord with shifts seen in the archaeological record in the Potomac River valley, with support for these shifts provided by an unusual oral history account. In 1660, a Piscataway

Great Man told then-Governor Philip Calvert of Maryland that "long agoe," or 13 generations earlier, a leader had come to the Piscataway from the Eastern Shore, or ca. 1350 CE. This shift appears to be reflected in the archaeological record. Prior to about 1300 CE, the predominant ceramic type in the Coastal Plain Potomac was Townsend ware, a shell-tempered ceramic produced from about 950 CE through the late seventeenth and early eighteenth centuries. Beginning about 1300 CE, however, grit- and/or sand-tempered ceramics, including Potomac Creek and, later, Moyaone ware types, also appear in the river valley's archaeological record.

A number of archaeologists have pointed out that, at about the time grit-tempered Potomac Creek ceramics began to appear in the inner coastal plain, palisaded towns in the Piedmont on both sides of the Potomac River were being abandoned; the inhabitants of these towns made and used a crushed quartz-tempered ceramic analogous to Potomac Creek types. As these towns were being abandoned, others in the piedmont were being established by people producing predominantly limestone-tempered ceramics. Archaeologists infer that the appearance of Potomac Creek ceramics in the Middle Potomac valley may reflect migrations from the Piedmont into the inner Coastal Plain, possibly spurred by migrations into the Piedmont from the west. While this seemingly contradicts the Piscataway Great Man's account, ossuary burials, present on the Eastern Shore, begin appearing on the western shore coastal plain slightly later. Archaeologist Stephen Potter (1993:126-138) has reconciled these accounts, and most archaeologists currently accept that, sometime about 1300-1350 CE, important transitions were taking place in the Potomac River valley.

Gallivan also found that, at least in Virginia between 1500 and 1607, there was an apparent decline in sedentariness, caused perhaps by political instability, an extended dry period (as revealed by tree ring evidence), or both (Gallivan 2002:549-552). The standard argument for this decline has been disease brought by earlier European explorations. Such explorations would have included the failed Spanish Jesuit Ajacán Mission of 1570 (probably on the York River in the Extended Project Area) and earlier expeditions by Lucas Vázquez de Ayllón in 1525 and Ángel de Villafañe in 1561 (Loker 2010; Potter 1993:161-164). Populations in parts of New England in the early seventeenth century were apparently decimated by European diseases before permanent English settlement took place in that region (Marr and Cathey 2010). European-borne diseases could have conceivably had an impact on populations in the Chesapeake, leading, for example, to the destruction of populations at Shenks Ferry in the Susquehanna Valley (Pendergast 1991:45)

Other researchers, however, contend that there is little archaeological evidence, at least in the Potomac valley, to support the notion that sixteenth-century European contact had brought any epidemics to the Native population in this region (Ubelaker 1974; Potter 1993:165). Studies of Late Woodland populations in the Potomac drainage in particular suggest that there was actually an increase in population size (Ubelaker 1974:68), and the abandonment of major settlements may date more recently, to the first decades of the seventeenth century; in some cases, these settlements moved inland along creeks or less exposed waterways. In order to fully resolve questions about the impact of European-borne epidemics in the sixteenth century, further study is clearly needed (Potter 1993:166).

Potter (1993:102) noted a shift in archaeological site types and their distributions from the earlier part of the Late Woodland to the later part in the Northern Neck of Virginia. Sites of "intermediate" size distributed across river neck-lands were generally supplanted by a single large site containing dispersed residential settlements. During the later Late Woodland, the chief's residence apparently formed a "core settlement" within the larger, dispersed town. Clusters of houses as well as hunting and gathering camps would be located within a 2-km range of the core (Potter 1993:88-89).

Potter's systematic study provides an estimate of the size of what could reasonably be called a catchment area for a community and provides a starting point for defining Smith-era ICLs. Similar work

on the dynamic nature of Late Woodland regional indigenous landscapes can be found in the work of E. Randolph Turner III (1976) and Helen Rountree (1989). These communities, while essentially "permanent" and centered around river drainages, often shifted in the landscape in response to resource availability (good soil, firewood), climate and weather, trading relations, and unfriendly neighbors.

Jay Custer and Daniel Griffith (1986) examined Late Woodland settlement patterns on the Delmarva Peninsula (the eastern shore of the Chesapeake, including Delaware, Maryland, and Virginia) through a focus on the seasonal mobility of macro- and micro-band base camps. Custer and Griffith developed five models of seasonally-based settlement patterns on the peninsula (Table 6). They found that macro-band base camps are typically found in floodplains along the major drainages of the Delmarva Peninsula, close to marshes on land between saltwater and freshwater environments. A minority of macro-band settlements, however, are found on bluffs overlooking drainage sections with low terraces and marshes. Conversely, micro-band base camps are noted as appearing along marshes, lagoons, and bays as well as in the floodplains of major drainages.

Model	Winter	Spring	Summer	Fall
1	Micro-band base camp; interior	Micro-band base camp; mid-drainage	Micro-band base camp; coastal	Micro-band base camp; mid-drainage
2	Macro-band base camp; interior	Macro-band base camp; mid-drainage	Macro-band base camp; coastal	Macro-band base camp; interior
3	Macro-band base camp; interior	Macro-band base camp; coastal		Macro-band base camp; interior
4	Macro-band base camp; mid-drainage		Micro-band base camp; coastal	Macro-band base camp; mid-drainage
5	Macro-band base camp; mid-drainage			

Table 6. Settlement types and seasonality based on Custer and Griffith's (1986) study.

Sites classified as procurement sites or short-term camps have more subtle distribution patterns. These sites are found in poorly drained woodlands along small sand ridges near low-order ephemeral streams. There are also regional differences, as small procurement sites appear along both major drainages (adjacent to swamps and marshes) and small bays and drainages (adjacent to barrier islands along the Atlantic coasts and the Chesapeake shoreline). These sites are presumably located in areas good for hunting, gathering, and shellfish collecting (Clark 1976; Custer and Griffith 1986).

Evidence from Virginia's piedmont communities reveals the great variation that existed in the Native landscape (Hantman 1993, 2018). Piedmont groups exhibited dispersed communities and isolated homesites away from the major river drainages. Late Woodland settlement patterns on the Delmarva Peninsula ranged from diffuse to concentrated (Thomas et al. 1975; Custer 1989). Busby's (2010) examination of Nanticoke settlements on Maryland's Eastern Shore showed a nucleated "core settlement" with smaller sites across a broad 3-km-plus area during the later Late Woodland giving way to more dispersed linear settlements along secondary drainages in the early Contact period. The point is, even within this relatively constricted area of the Chesapeake drainage on the Eastern Shore, variation existed in the archaeological expression of communities across the landscape.

Previous Settlement Modeling

GIS-based approaches to human settlement have emerged as a powerful tool for understanding the relationship of settlement locations to the environment and other natural, social, and cultural factors. GIS

technology allows a far greater amount of data to be collected, processed, and analyzed, with models based on a more rigorous foundation than earlier efforts, leading to strengthened interpretations. A number of different GIS-based studies have been undertaken throughout the Chesapeake, although not on a broad, Chesapeake-wide scale. Nonetheless, these growing numbers of studies have served to inform researchers about variables correlating (or not) with Native settlement in the broader Chesapeake region.

Examples of settlement modeling in western shore drainages, such as the Potomac, highlight a number of variables considered major determinants of settlement location. Stephen Potter (1993:94) identifies five major variables, including:

- Proximity to rivers and streams;
- Nearness to freshwater springs;
- Location upon the rise of a hill or ridge;
- Nearness to marshlands;
- Proximity to sufficient land suitable for slash-and-burn cultivation.

Strickland (2012) examined the nature of Native settlement on the lower and middle Potomac's north shore using archaeological site typologies defined by the Maryland Historical Trust (MHT). Not surprisingly, these typologies can be problematic, especially for those sites identified as "short-term camps" and "procurement sites." These types of sites appear with the largest frequency in MHT's archaeological site inventories, and the label appears to function as a catch-all term for Native sites with as-yet-unknown settlement activity. Nonetheless, Strickland's analysis revealed statistically significant correlations of Late Woodland sites with proximity to wetland areas such as the Potomac River and inland waterways. He also found that there was a range of correlations between site types, agriculturally-productive soils, elevation, and slope. Strickland was able to identify four types of Native settlement on Maryland's lower western shore and the attributes of each type. A summary of the results and interpretation of the statistical correlative studies of typologies can be found in Table 7. A proposed settlement model based on this data can be found in Figure 19.

Typology	Attributes
Villages/Towns	Strong association with proximity to shore
	Low elevations
	High potential crop yields
	Within close proximity to the most productive soils for corn
Base Camps	Close proximity to shore but with a longer range
	Range of elevations for its shore proximity
	No observed correlations to tested soil attributes
Hamlets	Close proximity to the shore
	Higher elevations than villages, but not a longer range
	Range of different soil productivity attributes
	Close proximity to villages and base camps
Short-term Camps/ Procurement	Close proximity to shore but with a longer range
	Range of elevations for its shore proximity
	Slight association with agriculturally productive soil types
	Range of travel times from villages and base camps, but still clustered with them

Table 7. Attributes of settlement types (Source: Strickland 2012).

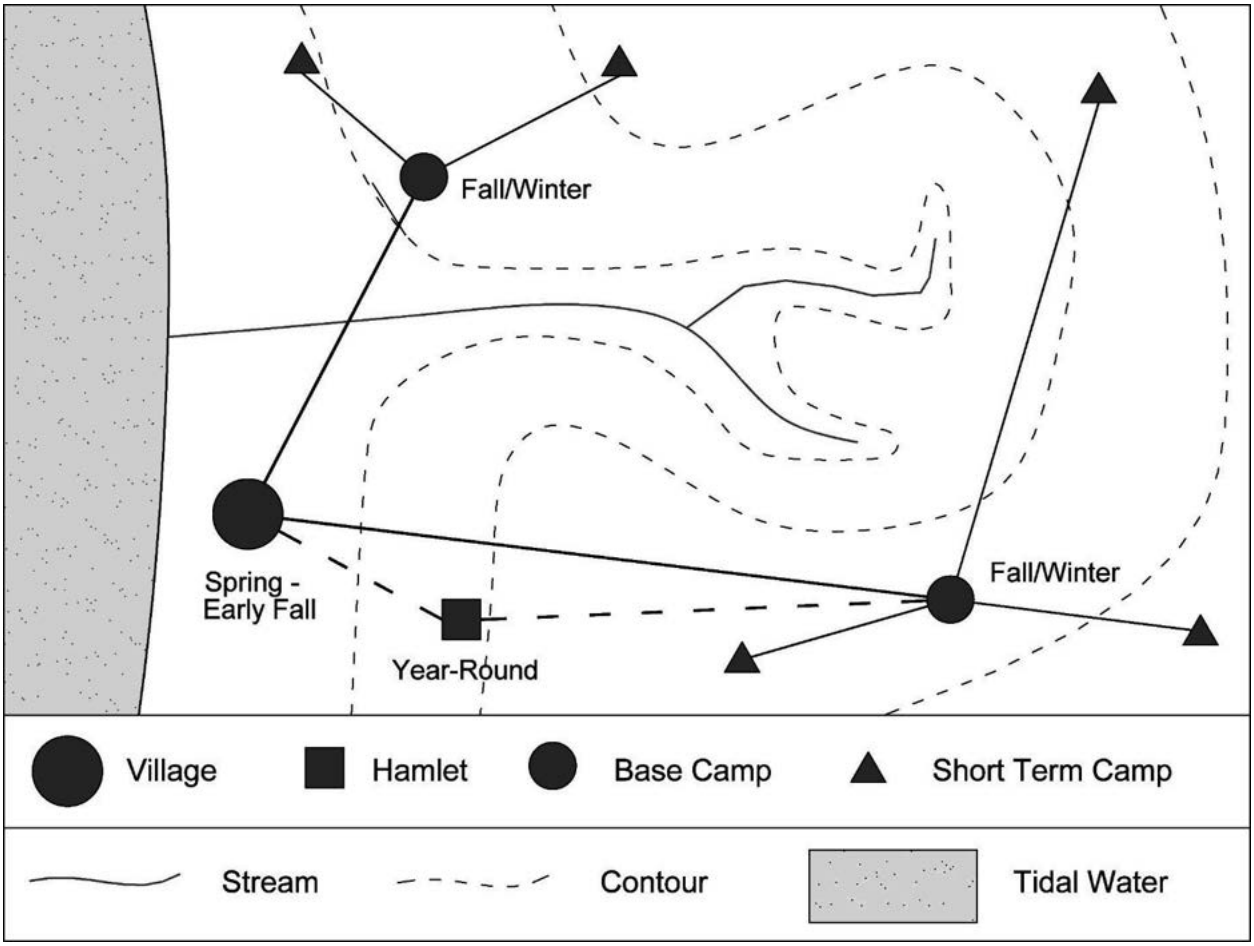

Figure 19. Settlement model for the Potomac valley (Strickland 2012).

Building on Stephen Potter's work on the south side of the lower Potomac, Doug Sanford and Mike Klein (1994) undertook an assessment of the archaeological resources of Richmond County, located on the north bank of the Rappahannock River. Sanford and Klein translated Potter's determinants into testable variables within GIS and performed statistical analysis of these variables as it related to recorded site data and newly collected survey data. Sanford and Klein were not focused solely on the Late Woodland, but on the whole of prehistoric occupation in Richmond County. At the time, few archaeological sites had been identified in Richmond County. Their data was supplemented with newly collected data as part of that assessment to examine the efficacy of Potter's Potomac model for the Rappahannock. Sanford and Klein (1994:207) suggested a reduction in the number of relevant variables, from Potter's five, to the following four factors:

- Distance to a rank 4 or great drainage;
- Distance to the Rappahannock;
- Distance to a marsh; and
- Type of landform.

Taking into consideration the above-mentioned studies, a number of similarities between ecological variables are evident. First, there is an emphasis placed on proximity to wetland resources, whether freshwater springs or tidal marshes. Proximity to major water bodies is another trait considered conducive

to settlement, particularly during the Late Woodland period. E. Randolph Turner (1976:86) argues that occupation in the Mattaponi-Pamunkey watersheds were the first in the Virginia Coastal Plain to move away from inland zones towards coastal areas along the major river waterways. This transition, Turner argues, took place between the Archaic and Woodland periods. For the Rappahannock and Potomac river valleys, however, Turner argues that the move to coastal areas came at the end of the Early Woodland period. By the Late Woodland and at the time of contact, he argues, coastal areas appear to have been the preferred zone of settlement. Additional attributes to consider include landforms as they relate to elevation, slope, and agricultural productivity. Given the growing population during the Late Woodland, the demands for subsistence agriculture would necessitate the locations of settlements on landforms and soils that are flat, well-drained, and agriculturally productive but that also provide some sort of protection from coastal flooding.

Gallivan (2016:76) notes a shift during the Middle Woodland period in the James and York river valleys toward estuarine environments as argued by Turner. While Gallivan notes that there was a decline in the number of Middle Woodland sites towards the end of the Middle Woodland period, the overall footprint of each site was notably larger. At the same time, the density of materials recovered from sites also increased. These indicators have been interpreted as signs that overall settlement patterns were shifting towards sites being occupied longer or repeatedly occupied over time.

These Middle Woodland estuarine sites appear to be focused on rotations of different kinds of estuarine environments, used on a seasonal schedule centered around the availability of different resources. Downriver locations in brackish water with salinity levels conducive to sustaining shellfish populations marks one type of environment. These shellfish would have likely been harvested in the fall and winter months. Sites upriver may have utilized the gatherings of anadromous fish such as shad, herring, and sturgeon during the spring and summer (Gallivan 2016:76-77).

The latter half of the Middle Woodland period has also been identified as following a pattern of warmer and wetter climate conditions. Temperatures reached a peak after about 500 CE. These warmer temperatures would have led to rises in sea-level and the conversion of low-lying areas into wetlands and marshes within tidal areas. While temperatures began to fall after 900 CE, the trend towards persistent and longer occupied clustered settlement continued to develop during the Late Woodland period in the James and York (Gallivan 2016:77-78).

Political and Ecological Environment of Werowocomoco

Martin Gallivan makes several inferences about Werowocomoco by comparing it to sites related to the Chickahominy, who were politically independent from the Powhatan polity. He argues that archaeological evidence points to a circa 1300 AD coalescing of the Chickahominy polity expressed by the production of shell-tempered ceramics, maize-based horticulture, dispersed town settlement, collective burials, and palisaded compounds. Colonial accounts described a distinction between the Powhatan and Chickahominy through differing power structures, with the Chickahominy ruled by priests and the Powhatan by chiefs and weroances. However, Gallivan notes that the Chickahominy, though politically independent from Powhatan, were economically and culturally linked (Gallivan 2016:108-109). The landscape outside of the York River valley contained ritual places important to all Virginia Algonquian groups, such as the religious center of Quiyoughcohannock, which was used by Powhatan, Chickahominy, and Rappahannock. This site was located on the south side of the James River across from the mouth of the Chickahominy River and is noted by Randy Turner (1976) as being named for the Algonquian word for priest, quioccosuk.

Werowocomoco was also a place of religious importance. Gallivan argues that this had been the case since at least 1300 CE. By placing the capital of his chiefdom at this sacred spot, Powhatan asserted

his control with a campaign to alter the built environment and enhance significance of the site. Among the features constructed at Werowocomoco were a series of parallel trenches along the settlement's west side running north-south and curving around to the east (see Figure 12). What Gallivan calls "chiefly features" constructed post-1560 include at least one large longhouse measuring approximately 72 feet in length. John Smith recalled this structure as being situated on a high sandy hill and located a good distance from the shore (Gallivan 2016:153-162).

The trenches at Werowocomoco are believed to have religious significance. At Quiyoughcohannock, these trenches were used to demarcate the edge of settled space and were part of the first stage of a rite of passage called a Huskanaw. This type of ritual, performed by priests, was intended to prepare young men to become weroances, priests, and respected warriors and councilors (called cockarouses). Accounts of this ritual come from colonists such as William White who witnessed a Huskanaw. During the ritual, young men would dance in two groups along a quarter-mile long circuit, all the while being subjected to beatings in order to keep moving. This circuit was marked by the series of outer trenches marking the edge of that "settled space." Then, the young men would be given hallucinogens and brought to a makeshift penned location in the forest where they could not interact with people from the settlement and had to survive. After approximately nine months, the surviving young men were reintroduced into society as changed men and could take on their selected roles (Gallivan 2016:176-177; White 1998:138; Smith 1986:171-172; Strachey 1953:98-100; Beverley 1947:209).

The approach to Werowocomoco from a landing on Purtan Bay would have been imposing. As one made their way from among the dispersed longhouses closer to shore to the upland terrace, the large chiefly longhouse and earthworks would have been a site to behold, a symbol of the political power it represented. Foot traffic to the longhouse was made by a gap in the trenches that was roughly aligned with the center of the longhouse, making it the centerpiece of this built environment. In fact, the viewshed from Werowocomoco and the longhouse likely included several nearby associated settlements, its visibility denoting it as an important place. The viewshed from Werowocomoco is described in more detail in Chapter VI.

The placement of Werowocomoco is significant within the broader York River landscape. The marshes east of Purtan Bay are the largest and most extensive along the river. The food resources available in this marsh would have been abundant and the marsh a valuable ecosystem for supporting ever-growing populations. As discussed in Chapter II and summarized in Table 3, marshes were sources for leafy greens, root vegetables, food seasonings, and wild rice. Marshes also attracted waterfowl and other marine animals used in Native diets.

The built environment around the chiefly longhouse, including the earthen ditches, can be interpreted as blending in with the existing natural environment. The main approach from the shore to the longhouse was through a gap in the earthworks. At a glance, less emphasis appears to have been given to the approach by land. The natural topography of the area, however, suggests intentional placement, making use of a natural chokepoint formed by spring/ravine heads immediately to the northwest and southwest of the longhouse. One spring/ravine head empties into Leigh Creek to the north and the other into Bland Creek to the south. This would have created a forced thoroughfare by land into Werowocomoco, one that aligned with the center of the trench-encircled spiritual center. Today, this approach is roughly in the same place as the existing driveway called Ginny Hill Road.

While the longhouse itself is impressive in its own right, its placement far from the main water landings and at a topographical choke point may have created an effect landscape architects call forced perspective (Figure 20). Forced perspective is a deliberate optical illusion which can make an object (like a building) appear larger and/or further away (it can also be used to make other objects seem smaller or closer). At a landing on Purtan Bay, the width of the landform that forms the peninsula where

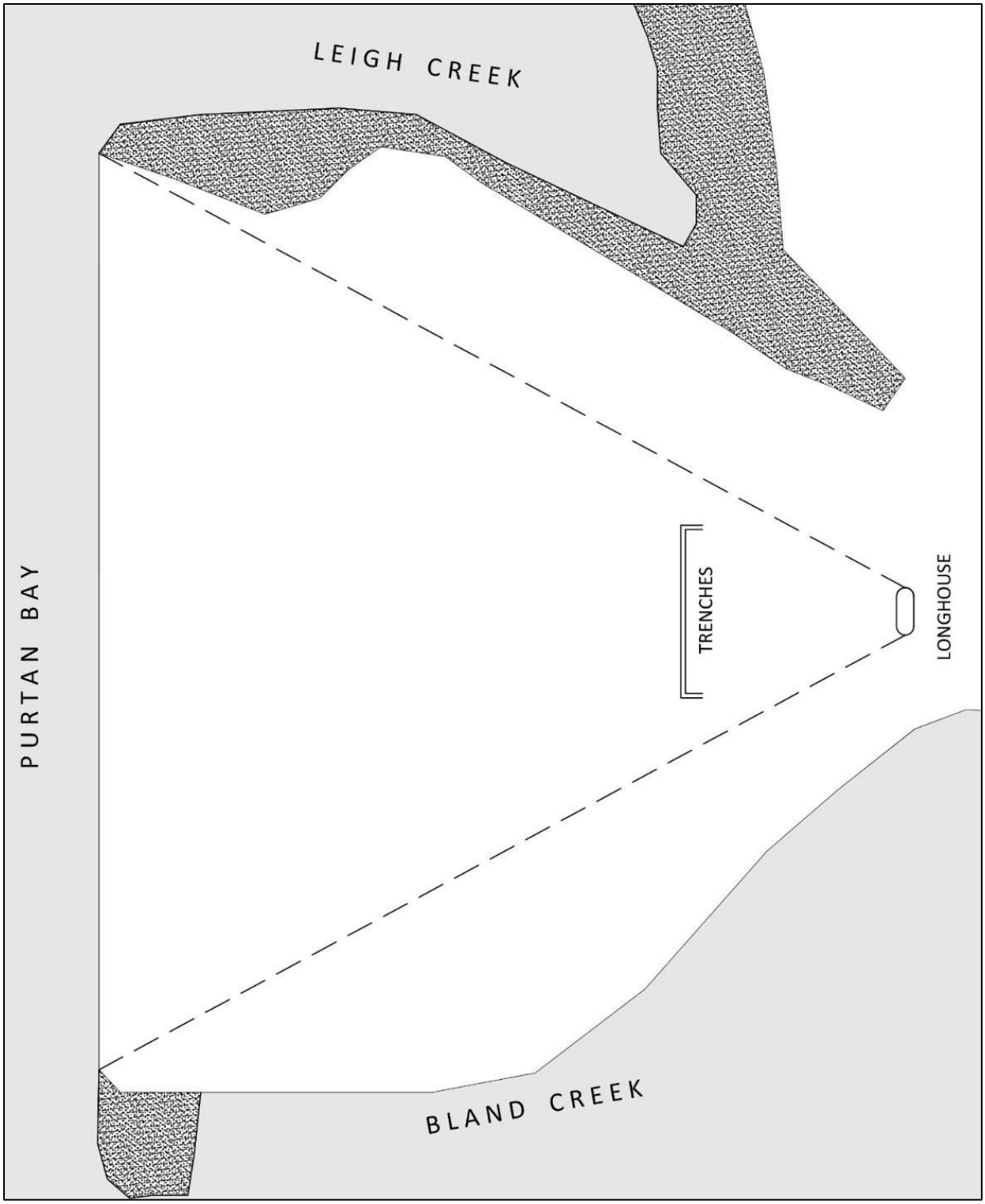

Figure 20. Simplified diagram of Werowocomoco feature perspective.

Werowocomoco is located is approximately 425 meters across. The greater width of the trenches west of the longhouse is approximately 80 meters, running parallel to and 270 meters east of the waterfront. The longhouse itself is 22 meters across and runs parallel to the trenches, at a distance 100 meters to the east. These ever-decreasing increments of width at these intervals creates the illusion that as one arrives at a water landing on Purtan Bay, the long house appears both further away and larger. This forced perspective is reinforced in the larger viewshed of Werowocomoco, where all lines of sight are oriented in this fashion.

Gallivan writes of the arrangement of space within Werowocomoco as an important progression from domestic areas of the common people to the spaces of the priestly and chiefly elites. The arrangement allowed for weroances and priests to observe people as they approached. Separation of space has also been described within the longhouse itself, with visitors being separated from the weroance by a series of interior screens (Gallivan 2016:173-174).

Other large settlements in the region have been found to have considerable time-depth, being used and visited by indigenous people in some form or another over several thousands of years. Examples of this include Kiskiack at the present-day Naval Weapons Station-Yorktown. Deeply stratified well-preserved shell middens at the site, located on the east bank of Indian Field Creek, demonstrate that the site has been occupied in some form since 1300 BCE through the early seventeenth century (Gallivan 2016:81). Other sites with comparable time-depth are also found in the Potomac, including at Potomac Creek, Accokeek, and Secowocomoco.

Gallivan describes Werowocomoco as a persistent place in the context of colonial invasion, being a place that is known to Native people who "continued to travel to locations whose significance was remembered from the past" throughout the colonial period, long after being vacated around 1609 (Gallivan 2016:184). In 1705, Robert Beverley described a practice among Native people wherein they would return to important places and erect stone piles and/or plant wooden posts/pillars and paint them red and adorn them with shell beads (Beverley 1947). This appears to mirror a practice observed by Captain John Smith almost a century earlier in which altar stones called pawcorances were erected "where they have had any extraordinary accident, or encounter." The knowledge of these places was passed down and "as you travel, at those stones they will tell you the cause why they were erected" (Smith 1624:36). Similar stone piles were found at the Accokeek Creek site in the Potomac Valley signifying that this may have been a widely used tradition (Figure 21) (Stephenson and Ferguson 1963:59).

Figure 21. Stone pile uncovered at the Accokeek Creek Site in Maryland (foreground) (Stephenson and Ferguson 1963).

CHAPTER V
ASSEMBLING THE EVIDENCE

CHAPTER HIGHLIGHTS

- This chapter describes the range of data assembled for this project.
- For mapping, tribes focused on historic and present-day communities in relatively small geographical areas, including the Pamunkey and Mattaponi reservations and Adamstown.
- Tribes emphasized the residences of elders and important tribal figures and community buildings, including churches, cemeteries, schools, and stores.
- Areas of importance beyond the immediate community include former reservation lands and places known through oral tradition and historical documentation.
- Historical records and maps confirm the importance of the Pamunkey and Mattaponi rivers as loci of settlement following English encroachment along the York River.
- Reservation lands were diminished by encroachment and a legal redefinition of reservation lands restricted to one side of a major waterway.
- Paths between the Portobago (Rappahannock) and Chickahominy (Mattaponi) towns linked communities between the York and Rappahannock river watersheds.
- Werowocomoco and Kiskiak have been archaeologically identified in the lower York River. Little archaeological survey, however, has taken place in the Pamunkey and Mattaponi watersheds and along non-Federally owned portions of the York.
- When compared with the Rappahannock River valley, there are relatively few tracts in the York, Pamunkey, and Mattaponi valleys protected from land use change.
- Public water access points, including boat ramps and trails, are relatively abundant within the project area, offering opportunities for development of the Chesapeake Trail.
- Potential trail partners include the Friends of Dragon Run, the Middle Peninsula Planning District Commission, the Nature Conservancy, the Town of West Point, and the Virginia Department of Game and Inland Fisheries.
- Ecotourism is emerging as a theme among potential trail partners.

This chapter pulls together information derived through tribal and non-tribal stakeholder input as well as archaeological, documentary, geological, and environmental evidence to define not just the landscape of Native peoples warily eyeing Smith in 1608 but the landscape of the contemporary Pamunkey, Mattaponi, and Upper Mattaponi tribes. An array of maps was generated to represent all of this information and to identify high probability areas containing physical traces of the historic ICL in the York drainage. These maps were then used to build a composite map in order to delineate not just the ICL boundary but the varied uses by contemporary tribes within the landscape.

A two-pronged approach was necessary given the large study area, including the York, Pamunkey, and Mattaponi river watersheds. First, maps emphasizing the archaeological, environmental, and other natural resources were generated for the entire three-river watershed (Extended Project Area). Secondly, consultation with tribal members and review of documentary records became critically important for identifying places important to Native people, historically and in the present.

Pamunkey Tribal Information

Pamunkey tribal representatives identified 69 locations of significance within the bounds of the present-day Pamunkey reservation, along with eight additional places located near or adjacent to the

reservation. Of the 69 locations identified on the reservation, 45 of them were houses or house sites. At the request of the Pamunkey tribe, these structures are not included in this report for privacy concerns. This data was still collected spatially and turned over to the tribe for their own use. In total, 32 unredacted locations inside and outside the reservation are shown in Figure 22 and are numbered sequentially, starting from the fishing shanties on the east side of the reservation. The sequence of numbers continues westward across the reservation. The legend for each location is shown in Table 8 and describes the importance of the identified areas and, as applicable, the activities associated with those locations. Two newly constructed buildings, the tribal office and tribal resource center, are listed last. Notably, certain areas that were not marked but that were part of group discussions are better shown through other data themes discussed later in this chapter – particularly archaeological sites and historic properties well known to the Pamunkey tribal community.

The Werowocomoco site, located on the north side of the York River on Purtan Bay about 22 miles east southeast of the Pamunkey Reservation, was not marked as part of the mapping exercise with the Pamunkey tribe. While not specifically discussed or marked, the Pamunkey have a vested interest in the site as it pertains to the greater knowledge of their past. The site served as the epicenter of Powhatan culture and the locus of pivotal events in Virginia history. All tribes consulting as part of the ICL project have been involved with the development and interpretation of the site (now owned by the National Park Service) through the Werowocomoco Research Group and the Virginia Indian Advisory Board.

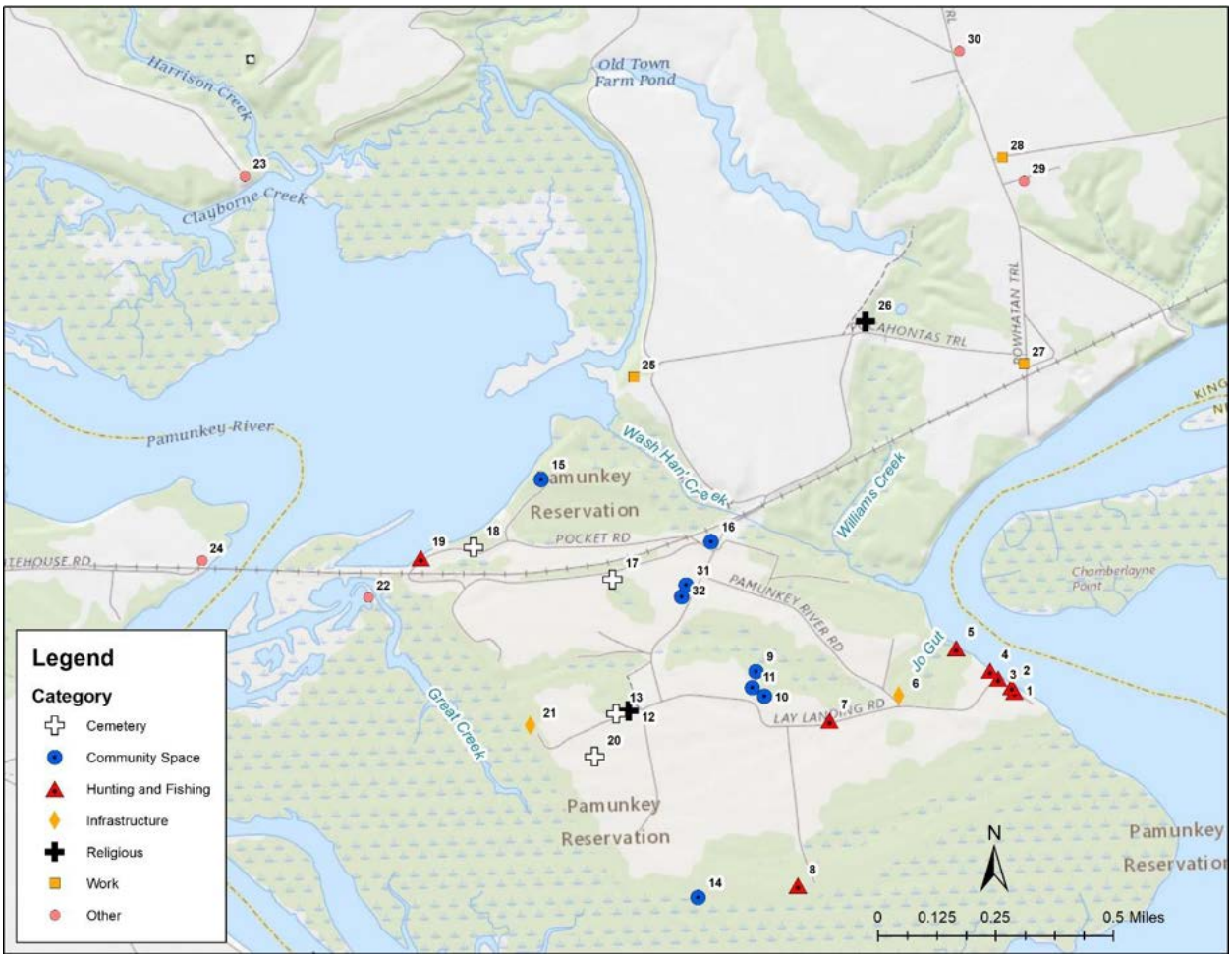

Figure 22. Pamunkey tribal mapped areas.

#	Description	#	Description.
1	Shanties	17	Graveyard and Terrell Bradby House
2	Last original shanty (demolished in 2019)	18	Cemetery
3	One of older shanties and reservation pier	19	Landing
4	Hatchery	20	Cemetery
5	Orig. 1918 hatchery location	21	Dump
6	Old road	22	Marsh
7	Deadfall trap; Chief Tecumseh Cook last to make traps	23	Elsing Green
8	Deer hunting takes place annually	24	White House
9	Pottery School	25	Old Town Farm
10	Community Hall; built in early 20th century	26	Old Church
11	School House	27	Lester Manor
12	Pamunkey Indian Baptist Church	28	Canning Factory
13	Pamunkey Indian Baptist Church Cemetery	29	Dunn's Store (Gasoline)
14	Spring creek	30	Previs/Marion's Store (Alcohol)
15	Pageant grounds and tannery	31	Pamunkey Indian Tribal Office
16	Log cabin trading post. Built with WPA funds.	32	Pamunkey Indian Tribal Resource Center

Table 8. Areas of importance identified by Pamunkey tribal members, keyed to Figure 22.

Conversations with Pamunkey tribal members provided important insight into tribal members' senses of places, especially within the reservation itself. The importance of maintaining a connection to the physical landscape was emphasized at a number of places, including the continued investment in the tribal fish hatchery and fishing operations, hunting and trapping, and agricultural self-sufficiency. These activities often extended beyond the bounds of the reservation onto neighboring properties, in the present and in the past, especially hunting and agricultural activities.

The fish hatchery maintained by the tribe has gone through many iterations over the past century. The hatchery has been in operation since 1918 specifically for shad (*Alosa sapidissima*), only shutting down for a brief period in the 1940s. The current hatchery serves to maintain one of the healthiest populations of shad in Virginia. Operations within the hatchery consist of three main parts – catching shad, processing eggs, and tagging hatched fish. The current hatchery building was established in 1989, jointly funded by the tribe and the Federal government, with later expansions taking place in the 1990s. Tagging of fish began in 1998 in an effort to study the life cycle of the fish itself. This research is done in conjunction with the Virginia Department of Game and Inland Fisheries and the Virginia Marine Resources Commission. Harvest of shad along inland waterways has been subject to a moratorium since 1994, though all state- and Federally-recognized tribes in Virginia are exempt from this moratorium.

Shad were an important resource in the past in part because of their predictable spawning behaviors. Shad runs typically take place each spring and were an important food resource in late winter when food is scarce. In 1613, settler Alexander Whitaker observed that "the sea-fish come into our rivers in March…great schools of herring come in first; shads of a great bigness follow them." In 1705, Robert Beverley noted that, "[i]n the spring of the year, herrings come up in such abundance…to spawn, that [it] is almost impossible to ride through, without treading on them" (DGIF 2018). Beginning in the eighteenth

century, populations of fish such as shad and herring began to decline due to the construction of dams that blocked their upriver migration.

The harvesting of shad and herring was an important economic activity for many Pamunkey. Several places mapped by the tribe include fishing areas and places related to the selling and marketing of fish, including nearby Lester Manor. This led to discussions about the importance of the broader landscape in which Pamunkey people reside, which includes urban centers such as Richmond, where fish was sold at the 17th Street Market. The rail line between West Point and Richmond, which cuts through the Pamunkey Reservation, had a stop at Lester Manor and was a vital hub of commerce and link to an important urban market. Many Pamunkey were also employed at a nearby canning facility that once operated just north of Lester Manor. In addition to the store at Lester Manor, there was a depot at White House, just to the west of the reservation across the river. Such proximity to these stores and depots along the railroad linked the Pamunkey and their economy to West Point, Richmond, Baltimore, and beyond.

Other places of importance linked to the economic welfare of the tribe include the pottery school and general store. As previously mentioned in Chapters II and III, ceramic production was historically a task performed by women. In the past, the opening of clay mines was a much-celebrated affair. This practice had been in decline since the mid-nineteenth century and, by the 1920s, was all but dying according to Frank Speck (1928). Revitalization efforts, however, came shortly after Speck's time with the tribe. The pottery school along with the Pamunkey Indian Pottery Guild was established in 1932 with the help of state funds. Dr. B. N. Van Oot, supervisor of Trade and Industrial Education in Virginia, was sent to Pamunkey to help establish the pottery school as an economic investment for the tribe to increase revenue, including through tourist dollars. The pottery guild was originally run by all women, who were trained in mass production techniques by outside instructors. The wares were sold at the old general store near the entrance to the reservation, then called the "Display House."

By the early 1950s the old general store was in poor shape, so market operations were moved to the schoolhouse. The general store was initially funded with compensation from the Southern Claims Commission in 1874. Members of the tribe had sought compensation from the Commission for lost property and the use of parts of the reservation for Union encampments during the Civil War. The store was operated through a joint stock company until 1899 when operation switched to the tribal government (Spivey 2017). The schoolhouse, which also served as a trading post for the sale of crafts and ceramics, was built in 1906 and was in operation as a school until 1954. From 1959 until the 1980s, it was used as a craft center. The school was later restored and serves as an extension of the adjacent museum store and for storage. Schooling for the Pamunkey after 1954 took place in local schools while some students continued their education out west through schools sponsored by the US Bureau of Indian Affairs.

Communal spaces were also marked as important, including tribal hunting grounds, pageant grounds where pow-wows are held, and the picnic spring. Tribal hunting grounds were located in the south end of the reservation, and correspond with observations made by Frank Speck in the 1920s (see Figure 6 in Chapter II). The pageant grounds were located on the opposite end of the reservation, north of the railroad tracks. Near the pageant grounds was the pottery studio of Warren Cook. A spring in the woods near the tribal hunting grounds was also a place where people would enjoy picnics.

The church, its cemetery grounds, and other cemeteries are also important places. Some of these burial grounds are not readily visible in the landscape. The Pamunkey Indian Baptist Church was built ca. 1865 and the adjacent cemetery was likely in use beginning around the same time. The earliest legible gravestone in the cemetery is dated 1877. As of April 2018, there are 50 marked graves with an unknown number of unmarked graves. At least four other cemeteries or burial locations are dispersed throughout the reservation, some of which are now wooded while others are located in farm fields.

As previously discussed, the most numerous place-type shown and mapped by the Pamunkey were domestic residences, including the houses of chiefs and former chiefs, tribal members, and former house sites. While detailed histories of each residence are beyond the scope of this project, basic data on each was collected, though the extent of detail varies depending on the structure or site. Basic data collected, but not provided in this report, includes the names of current residents and/or past residents. The dates of construction of each house site were not collected.

The home of one Pamunkey tribal member (built in 1893 or 1894 by his father and brother), visited on the first of the two driving tours of the reservation, served as a launching point for discussions about the typical Pamunkey household during the twentieth century. The tribal informant described several features present at his homeplace that were common among other households on the reservation. The introduction of electricity came to the reservation, including at this informant's house, in 1944, and their family owned one of the first automobiles on the reservation. Generally speaking, each household maintained their own garden, field crops, chicken coops, and a smokehouse. Goods produced at the homeplace would be sold at the market at Lester Manor. Some members of the tribe were also involved in the canning of meat up until 2010. The input gathered emphasized the importance of self-sufficiency and sustainable living on the reservation throughout the century.

All of the data points marking these places of importance were digitized within a GIS database made available to the Pamunkey in anticipation that it can be used to document the changing landscape of the reservation and anchor and collect important tribal histories. Included in this data are also digitized historic USGS quadrangle maps depicting structures dating from 1920 through 1978. A mock-up version of a web platform with the collected information is to be published as a private ArcGIS Online interactive map (Figure 23). It is the intent that the stewardship of this map can be transferred to the Pamunkey for their own purposes, as outlined in the recommendations section of this report in Chapter VIII.

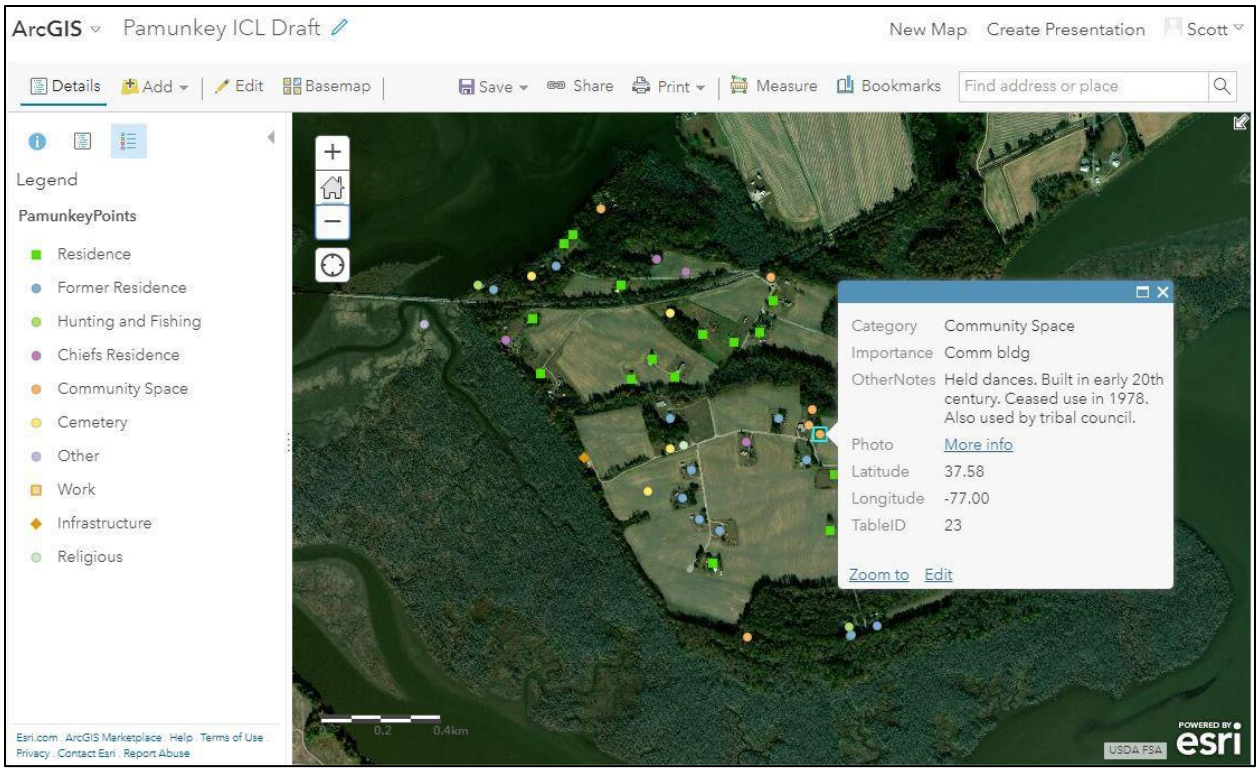

Figure 23. Mockup of ArcGIS online database of Pamunkey Reservation features.

Upper Mattaponi Tribal Information

The Upper Mattaponi representatives identified 21 locations of significance within the area historically known as Adamstown along with five additional places located along the Mattaponi and Pamunkey rivers. These 26 locations in their totality are shown in Figure 24 and are numbered sequentially starting from a location known as the Sam Ball property along the south bank of the Mattaponi and moving southeast past Adamstown to the community known as Pampatike on the north bank of the Pamunkey. A close-up of the area around Adamstown is shown in Figure 25, The legends for each location are provided in Table 9, which describes the importance of identified areas and, as applicable, the people associated with those places. Notably, certain areas that were not marked but that were part of group discussions are better shown through other data themes discussed later in this chapter, particularly archaeological sites and historic properties well known to the Upper Mattaponi tribal community.

The historic community of Adamstown is located near present-day Central Garage at the intersections of Virginia Routes 30 and 360. It is named after the Adams family, the progenitors of many of the Upper Mattaponi tribe. The bounds of Adamstown are roughly described as the areas where family members currently or formerly lived. This includes the Sharon Indian School and Tribal Grounds across the street. It encompasses nearly all of the eastern part of Central Garage east of Route 360 to a branch of Manquin Creek to the southeast and to a branch of Aylett Creek to the north.

Historic maps around the area of Central Garage/Adamstown produced during the Civil War depict "Indians" on the north side of what is now Route 30 (see Figure 17). This area was also identified by several Upper Mattaponi as being the core area of the historic Adamstown community, between Indian Church Road and Medlin Lane. Oral tradition relates that three brothers, including Billy, Richard, and Thomas Adams, were the original landowners of the historic Adamstown core. The land that is now King William High School was formerly the land of Manny Mills. Manny Mills was one of the first people buried at Indian View Baptist Church, located directly adjacent to the Upper Mattaponi's Sharon Indian Schoolhouse. A previous burial place/cemetery is located somewhere on the high school property in the woods, consisting of unmarked graves, but well known to older tribal members.

In the recent past, members of the Adams family also operated the King William Country Store on the west side of Route 360. The store is no longer there, having been replaced by a gas station and a Burger King restaurant. Behind the location of the old Country Store is a Food Lion grocery store. This was once the house of Arthur Adams of the Upper Mattaponi. Dwelling houses of current and deceased elders were among the most numerous places mapped by the Upper Mattaponi. These dwelling places include standing structures such as the homes of Cleveland "Clip" Adams, Minnie Adams, Susie and Edmond Adams, and Melvin Adams as well as the home of former chief Ken Adams. Not all of these homes are still in the possession of their respective families. The Clip Adams and Minnie Adams houses, for example, are tenant houses situated on land owned by people outside of the tribe. Former structures include the homes of Verna Custalow, Rose Adams, the old Ben and Alice Adams house, and the Manny Mills property. One unique location in Adamstown, near the later home of Ben and Alice Adams is the decaying ruins of a WWII-era plane crash in the woods that was last seen decades ago by Upper Mattaponi hunting in the area.

A total of six cemeteries are located throughout Adamstown. One cemetery, as previously noted, is located on the old Manny Mills property now occupied by King William High School. The dates of these cemeteries are unknown, but are likely family plots that predate the present Indian View Baptist Church, which was built in 1942. Two other cemeteries are located near the church, one on the hill behind and northeast of the Sharon Indian School and the second across the road from the church. The cemetery across the road was noted as being in use after the church was built. Two other cemeteries are located within the old core of Adamstown with one in the woods off of Medlin Lane and the other south of the Susie and Edmond Adams house off of Indian Church Road.

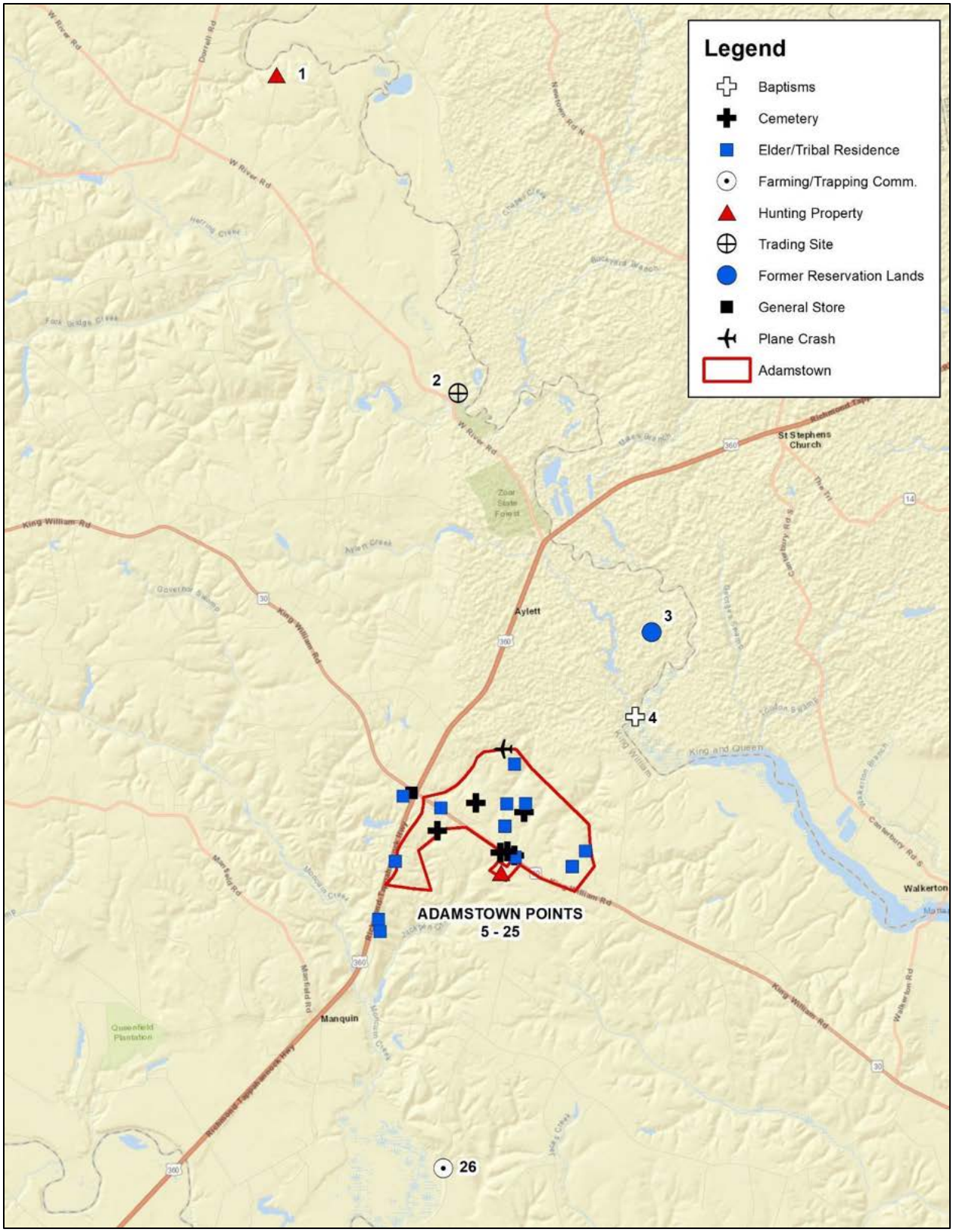

Figure 24. Upper Mattaponi tribe mapped areas.

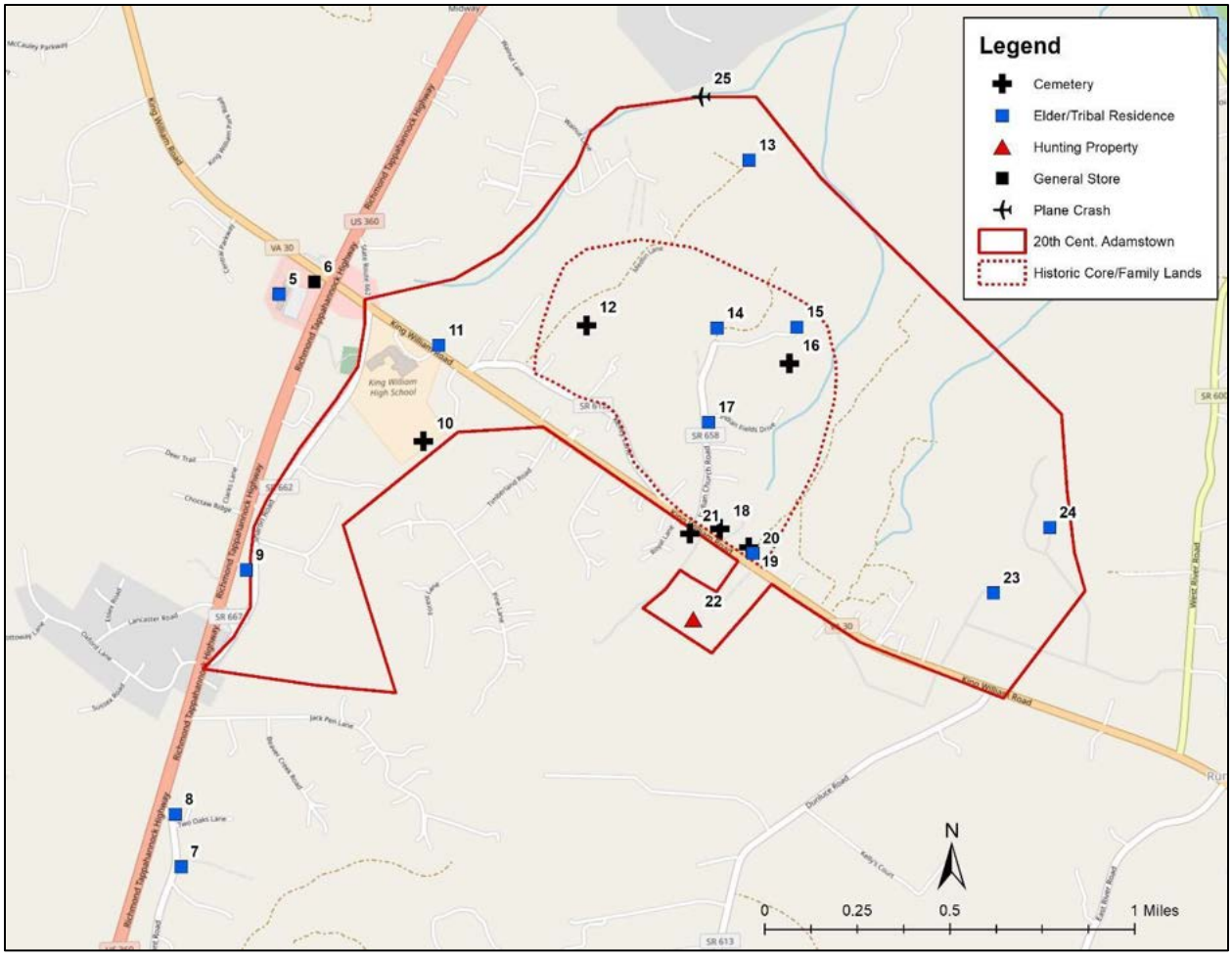

Figure 25. Upper Mattaponi tribe mapped areas, Adamstown focus.

No.	Description	No.	Description
1	Hunting - Sam Ball Farm	14	Residence - Rose Adams
2	Trading Site - Woolford Property	15	Residence - Susie & Edmond Adams
3	Former Reservation Settlement	16	Cemetery
4	Baptism - Montalbano Property	17	Residence - Verna Custalow
5	Residence - Arthur Adams House	18	Cemetery
6	UM-Owned General Store	19	Residence - Old Ben & Alice Adams
7	Residence – UID	20	Cemetery
8	Residence - Ken Adams	21	Cemetery
9	Residence - Melvin Adams	22	Tribal Grounds
10	Cemetery	23	Residence - Minnie Adams
11	Residence - Manny Mills	24	Residence - Cleveland Adams
12	Cemetery	25	Plane Crash
13	Residence - Alice & Ben Adams	26	Pampatike/Island Farm

Table 9. Areas of importance identified by Upper Mattaponi tribal members, keyed to Figures 24 and 25.

Present-day community activities of the Upper Mattaponi are centered around the Sharon Indian School, Indian View Baptist Church, and the Upper Mattaponi tribal grounds located across the street from these two structures. The Sharon Indian School was first established in 1919 with funds from the King William County School board. The school was built with the help of the Mattaponi and Pamunkey tribes, and the interior was furnished by the families of the school children. The original timber frame schoolhouse (Figure 26) was replaced in 1952 with the current building. It provided primary and secondary education until 1965. For a few years in the 1960s, the school was also used by members of the Rappahannock tribe of King and Queen County. Rappahannock children had been previously schooled in the Chief Otho Nelson house in Indian Neck, near the present-day Rappahannock Tribal Center. Classes were taught by instructors assigned by the King William County School board, and at least one teacher was a member of the Upper Mattaponi.

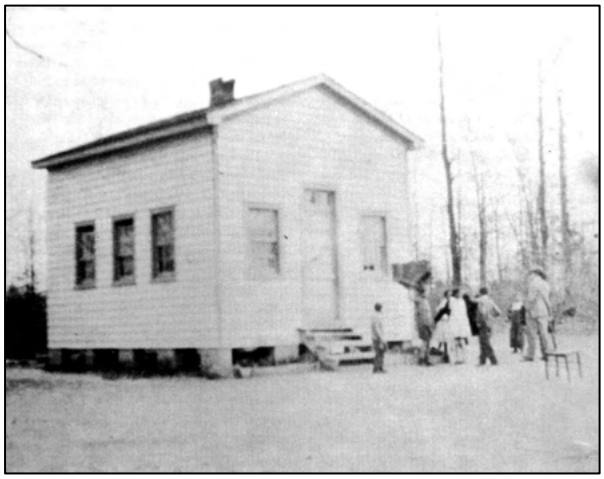

Figure 26. Original Indian View (Sharon Indian) schoolhouse.

The Sharon Indian School was one of several places where inter-tribal exchanges took place throughout the twentieth century. This included homecoming dances held during alternating weeks in August between the Upper Mattaponi, Mattaponi, Pamunkey, Chickahominy, and the Rappahannock. Each tribe would hold separate homecoming dances, and because the dates alternated, the youth from the other tribes were encouraged to attend each dance. Homecomings are still held, but due to the growing sizes of each tribe, they are only attended by their respective tribal youth. After the school ceased to operate in the 1960s, the building was used as county offices until 1987, when the Upper Mattaponi retook possession of the land, repurposing the building as their tribal center and community hall. Tribal meetings and other events are now held here. Unfortunately, repeated damaging rainstorms throughout 2018 have moved tribal meetings to the pavilion at the nearby tribal grounds.

The schoolhouse was also the precursor to the Indian View Baptist Church now located next door. Prior to the church's construction in 1942, church services and Sunday school were held inside the original, pre-1952, schoolhouse. The cemetery at the church and directly across the street are the primary post-1942 cemeteries for the Upper Mattaponi. Central figures in the construction of the original school and church were Mollie Wade Holmes Adams and her husband, Chief Jasper Lewis Adams, who facilitated the purchase of the land on which the two structures now sit. Indian View Baptist Church is currently headed by Rev. Joshua Lewis. The church's importance to the tribe cannot be understated and has been described by former chief Ken Adams as "the glue that held the tribe together." Under the leadership of Chief Jasper and Mollie Adams, the Upper Mattaponi became an organized entity in 1921.

The Upper Mattaponi Tribal Grounds is the location where larger outdoor events for the tribe are held, including an annual Pow-Wow. Most recently it was used to host the tribe's Federal recognition celebrations, which were attended by the ICL research team on September 1, 2018. The grounds are also where the tribe holds turkey shoots and other hunting activities. The wooded area of the property is used for hunting deer, squirrel, rabbit, dove, and turkey. Directly adjacent and to the south lies woodlands owned by the Gilman Lumber Company, which is a potential future acquisition for the tribe containing sensitive wetlands and important hunting grounds.

While the church and tribal center and grounds form the backbone of Upper Mattaponi sense of community, other activities, including hunting, are important as well. Hunting takes place both on and around the tribal grounds and at other properties much further afield of Adamstown, especially in the past. One such property was the Sam Ball farm near Aylett. The farm property is now owned in separate parts by Sam Ball's heirs and (to the east) by the Chesapeake Corporation, a gravel mining company. The tribe had an established relationship with the late Mr. Ball, who gave members of the tribe permission to use the grounds for hunting. Twenty to thirty years ago the property was a prime spot for fishing and hunting of deer, turkey, and rabbits. In addition, access to the Mattaponi River made the property a good swimming location. Mr. Ball would frequently find Native artifacts from his fields and show his finds to the Upper Mattaponi.

A second spot frequented by several Upper Mattaponi was Cownes, a property owned by Mr. James Woolford. The existing house known as Cownes was built in 1850 along Herring Creek. It was between the two Herring Creeks in the seventeenth century that a reservation was once located. The Upper Mattaponi would often collect artifacts from the property along Herring Creek. Mr. Woolford and the Upper Mattaponi believe that a site located on the property may be the location of a trading post and Mr. Woolford indicated that he had found artifacts of Portuguese origin that may be seventeenth-century majolica or Iberian olive jar.

Mr. Woolford's artifact collection was not seen as part of this study, but it is recommended that a future study of his collection may be of value. Article 7 of the 1646 Treaty Ending the Third Anglo-Powhatan War specifies that a place known as Fort Royal was located somewhere on the north side of the York River as a sanctioned trading place. The location of Fort Royal is not precisely known, but pending an examination of the Woolford collection, this site may be one such possibility.

The Woolford property is also the location of a historic ferry crossing and the site of an encampment established by Union General Philip Sheridan during the Civil War. It is known through Pamunkey documentary history that the Union Army enlisted Native men to fight for the Union cause. Oral tradition of the Rappahannock tells of Union soldiers coming to King and Queen County with orders not to disturb the homes of Native people. Whether the Upper Mattaponi were also part of the recruitment efforts of the Union Army is a topic for future fresearch.

The area around Herring Creek was noted by the Upper Mattaponi as a good location for herring, shad, and rockfish. Portions of land adjacent to Herring Creek also contain fairly large exposed clay bluffs that may have served as clay sources for Native ceramic production in the past. Non-native plant species that grow in the area include Sloe (*Prunus spinosa*, also known as blackthorn), a prized berry that can be eaten directly or used to make wine or gin.

The Mattaponi/Chickahominy reservation is described in the seventeenth century as being between the two Herring creeks. The Woolford property is near the western edge of the conjectured reservation location. Towards the eastern end at another Herring Creek near Aylett Millpond is the Montalbano property. This property holds religious significance for the Upper Mattaponi and their Christian faith. It was here in the twentieth century where the Upper Mattaponi would perform baptisms and other ceremonies. This is a place that the Upper Mattaponi no longer have access to and access was not granted for this study.

Lastly, outside of Adamstown lies the farming community known as Pampatike, located in the Pamunkey watershed. Pampatike is centered around the entrance to a farm known as The Island, which is owned by William Tyler, the great grandson of President John Tyler. As noted in Chapter III, the 1662 Langston map (see Figure 13) refers to the area of The Island (or the land adjacent to it) as the ancient seat of Opechancanough. Archaeological evidence from surface surveys by the James River Institute on The

Island have been interpreted only as temporary camps. Some Upper Mattaponi had previously visited the property with Dr. E. Randolph Turner in the 1980s where they observed artifacts on the surface.

Figure 27. The Adams House in Pampatike.

While the Island Farm may have important seventeenth-century Native history, its nineteenth- and twentieth-century association with the Upper Mattaponi explains its importance. Just south of the entrance of The Island farm along Pampatike Road sits a house that was once the home of Chief Frank Adams' grandparents. Chief Adams described The Island farm as a place where his grandparents and other members of the Native community worked the tobacco fields. The house still stands to this day and can be seen in Figure 27.

Mattaponi Tribal Information

The Mattaponi, while ultimately choosing not to participate in the project, provided the ICL team with valuable information. No driving tours were conducted with the tribe but several tentative properties/places were identified by Chief Mark Custalow as potential driving tour locations had they been available to participate.

Two locations were identified by the Mattaponi that coincided with areas of importance to the Upper Mattaponi, including the Woolford property, located near Aylett, and the burial ground/cemetery located on the property of King William High School in Central Garage. Like the Upper Mattaponi, the Mattaponi recognized the Woolford property's significance as part of the original Mattaponi/ Chickahominy reservation. The interest in the cemetery stems from correspondence between the tribe and an unnamed acquaintance who had told them about the cemetery in January of 2018.

Other sites outside the current Mattaponi reservation include Sandy Point State Forest (known to the Mattaponi as the former Brooks property) to the west and the Wakema plantation to the east. These two sites were identified as once a part of their current reservation lands, lying within the three-mile buffer of their main historic settlement centered on the current bounds of the reservation. The tribe has recently expressed interest in the reacquisition and purchase of lands near their current reservation. The tribe also expressed interest in knowing about nearby significant archaeological sites that may be associated with the tribe, including, but not limited to sites identified by Dr. E. Randolph Turner near Walkerton on a plantation known as Locust Grove.

Several points of emphasis were made by the Mattaponi. The Mattaponi people had historically moved to a number of different places in different counties, including at the Mattaponi fort on Piscataway Creek in Essex County, elsewhere in the Rappahannock River watershed, and camps along the Chickahominy River. As part of their desire to move forward with the Bureau of Indian Affairs process for Federal recognition, the tribe aims to fill in gaps in their historical documentation, specifically the periods during the late eighteenth and early nineteenth centuries. This would include more information about the history of their current reservation, the location of any historic paths, tribal land transfers, and any historical market places, churches, or cemeteries that may be associated with the tribe.

Chief Custalow informed the ICL team about the importance of the tribe's conservation efforts, especially with regard to the shad hatchery. Like the Pamunkey, the Mattaponi have operated a shad hatchery on their reservation for many decades in coordination with the Virginia Institute of Marine Sciences. The first shad hatchery was established at the wharf next to the current hatchery in 1916. The tribe expressed hope that the ICL project could shed light on paths forward for future conservation efforts.

In 2016 and 2017, the Mattaponi tribe, in conjunction with the Virginia Department of Historic Resources and the College of William and Mary, undertook the documentation of structures important to the tribe's history in an effort to explore designation of the reservation as a historic district. A report, *Heritage Properties of Indian Town: The Mattaponi Indian Baptist Church, School and Homes of Chiefly Lineages* (Woodard and Moretti-Langholtz 2017), was produced with funding through the National Park Service's Under-Represented Communities Grant program. Documented structures include the Mattaponi Indian Baptist Church, Mattaponi Indian School, the current and former fish hatcheries and wharf, and several home sites. Home sites include the Thornton Allmond House, the Curtis Custalow House, the King-Custalow House, the Langston House, and the O.T. Custalow House. Three of these domestic sites are associated with tribal leadership. The Thornton Allmond house is associated with Chief Eliza Major. The Curtis Custalow and O.T. Custalow houses are associated with their namesakes, Chief Curtis Custalow and Chief O.T. Custalow.

The Mattaponi Indian Baptist Church was built in 1935 and is an important center of Mattaponi identity. Chief George "Thunder Cloud" Custalow introduced Sunday School on the reservation in 1922. Chief Custalow also advocated for the church's construction, in part to distinguish the Mattaponi as separate from the Pamunkey tribe. Throughout the nineteenth century, many Native people residing in King William County, including the Mattaponi, the Upper Mattaponi, and Pamunkey (and the Rappahannock in King and Queen County), attended services at the Colosse Baptist Church and are buried in the cemetery there. The Colosse Baptist Church is located in King William County on King William Road, less than two miles west of the Mattaponi Reservation. Names associated with the tribes such as Acre, Adams, Allman, Arnold, Cook, Custalow, Davis, Dickey, Fortune, Hanes, Harris, Hill, Holmes, Major, Miles, Page, Tuppence, Wheely, and Winn appear in 1835 rolls of the church.

The cemetery associated with the Mattaponi Indian Baptist Church predates the 1935 church, with the oldest marked grave dating to 1878. There are an unknown number of unmarked graves in the section of the cemetery with the 1878 grave that probably date earlier.

Chief George Custalow was also instrumental in lobbying for the first Mattaponi school, which opened in 1916. The first school was located adjacent to the older section of the cemetery. The present Mattaponi Indian School, built in 1929, currently serves as the main tribal meeting space. This school taught children from first through eighth grades. In 1950, the school was consolidated with the Pamunkey school on the Pamunkey Reservation while the building underwent renovations with funds from the Society of Friends and the Richmond Dietetics Association. In 1951, the school reopened and became known as the Mattaponi-Pamunkey school. It continued in use as a school until segregation ended in 1964. The school was converted into living space and was lived in by Christine Custalow while still being used as a meeting place for the tribal council. Since the late 1970s, the school has been used primarily as a tribal meeting space.

The Thornton Allmond House is also known as Queen of the Mattaponi House and is named after the son of Chief Eliza (or Leizzia) Major. It is the oldest standing structure on the reservation, having been built around 1880. Eliza Major is considered the last Queen of the Mattaponi. The Chief Curtis Custalow House, built in the mid-twentieth century, is located east of the Minnie Ha-Ha Educational Trading Post, which also serves as the tribe's museum. Located on this lot is also a small one-story exhibition hall built around 1970. The Chief O.T. Custalow House was built in 1900. O.T. Custalow was the son of Chief

George “Thunder Cloud” Custalow. The King-Custalow house was also built around 1900, and while not noted as being the home of a chief, it is associated with the chiefly Custalow lineage. The Langston House, also known as the Lee Major property, was built in 1918 and is associated with Lee Major, the son of Chief Elston Major.

Information gleaned from the introductory meeting with the Mattaponi tribe and the report produced by the College of William and Mary can be used to preliminarily sketch out the Mattaponi ICL. Additional information provided by Chief Mark Custalow revealed certain areas members of the tribe avoid in their daily life. The town of West Point, for example, is perceived as a place where tribal members experienced racial resentment towards Native people, stemming from decades of racial discrimination and, in some cases, violent confrontation. In the face of such discrimination, the Mattaponi tribe has nevertheless persisted against such forces and continues to have a vibrant and active community with a deep sense of their heritage and history.

Historical Record Data

Historical records, beginning with John Smith’s map of the Chesapeake region (see Figure 1), contain important clues about Native use of the landscape and these documented features are included in the ICL (see Figure 28 for conjectured locations). Even though it is a remarkable representation of the

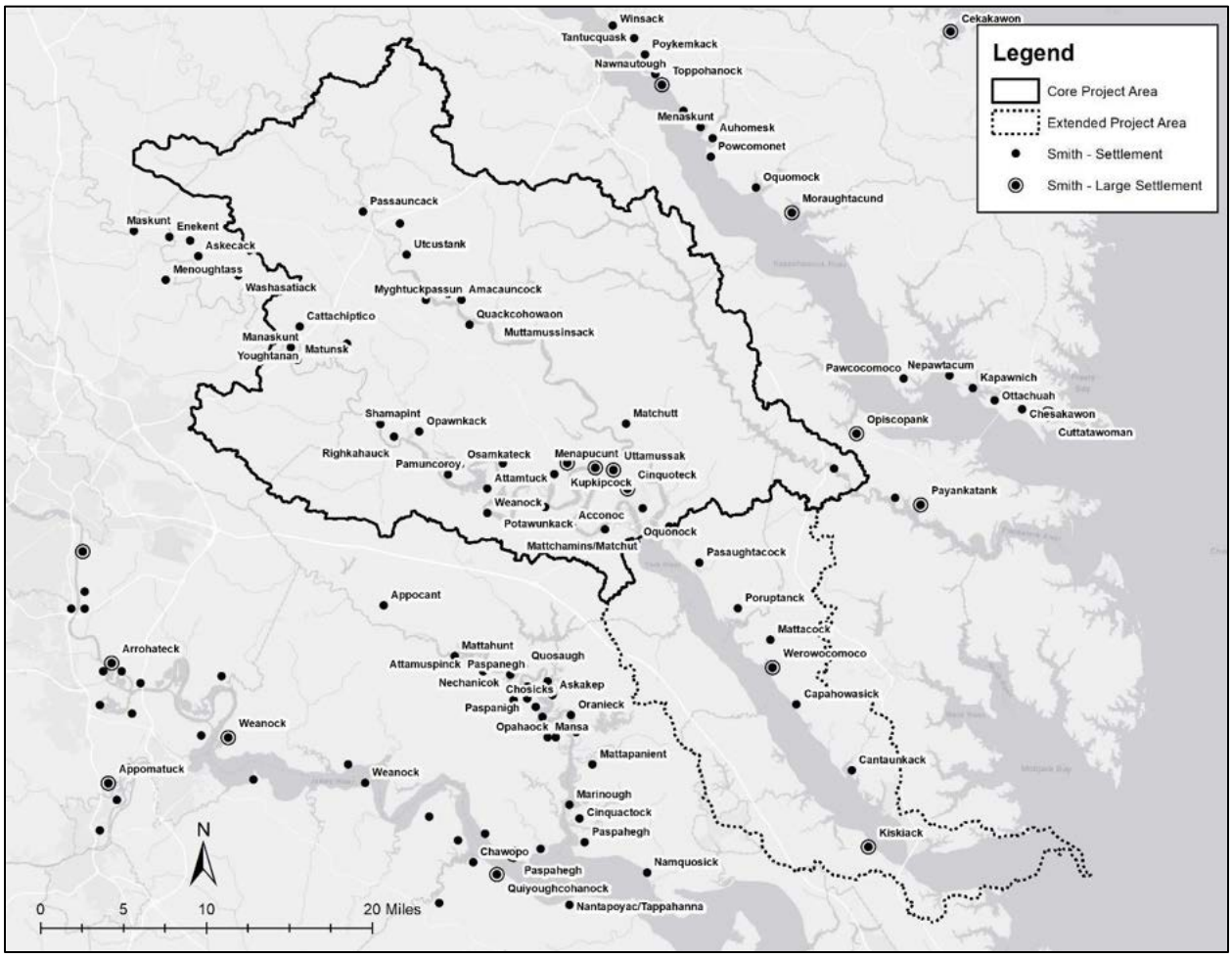

Figure 28. Conjectured locations of Native settlements shown on the Smith map.

Bay and its tributaries, the Smith map cannot be used to precisely locate Native towns on the ground. The Smith map is, at best, a rough representation of the landscape and one viewed through European eyes. Many researchers, including the authors of this report, have digitized the Smith map in an effort to place it on modern maps. These efforts invariably result in different interpretations of where settlements may have been located. For the purposes of this project, settlement locations were digitized according to interpretations depicted by the National Park Service Chesapeake Bay and edited to reflect demonstrably known archaeological identifications in the site inventories on file with the Virginia Department of Historic Resources (DHR).

A number of archaeological sites have been previously identified that may represent towns shown on Smith's map. These sites include Werowocomoco (44GL0032), Kiskiack (44YO0002), and Capahowasick (44GL0420). Several other Late Woodland period (900-1600 CE) sites may also represent settlements shown on the Smith map. A total of ten sites are located within close proximity to one another near the conjectured location of Cantaunkack in Gloucester County, one site near Mattacock (44GL0047), two sites near Poruptanck (44KQ0054 and 44KQ0072), an ossuary and shell midden site near Pasaughtacock (44KQ0010), two sites in the vicinity of Kupkipcock and Menapucunt (44KW0072 and 44KW0073), two sites near Potawunkack (44NK00240 and 44NK00242), four sites near Weanock (44NK0057, 44NK0058, 44NK0066, and 44NK0280), three sites near Attamtuck (44NK0020, 44NK0223, and 44NK0224), ten sites located on the Pamunkey Reservation near Pamuncoroy and Osamkateck, two sites near Askecocack and Parakonosko (44KW0001 and 44KW0244), and two sites near Muttamussinsack and Quackcohowaon (44KQ0037 and 44KQ0042).

While it has not been identified archaeologically, the location of the religious center of Uttamussak is known through oral tradition as in the vicinity of the community of Romancoke, just west of West Point. This has long been an area visited by the Pamunkey and matches the physical description by Smith of a place with red clay cliffs and sandy hills.

Of possible value to the interpretation of settlement locations is the Zúñiga map (see Figure 9). This map, which gets its name from Don Pedro de Zúñiga, the Spanish ambassador to England, is a copy of a map that may have been drawn by Captain John Smith in 1608. Zúñiga delivered this map to King Phillip III of Spain in September 1608. The map is considered a copy of an unpublished manuscript by Smith because of its similarities with the settlements shown and their descriptions in Smith's *A True Relation*. The map is most famous for its accurate depiction of the location and form of James Fort and Powhatan's settlement at Werowocomoco.

Other historic maps include the 1662 Langston map (see Figure 13) and the 1670 Augustine Herman map (Figure 29). The Langston map notes an island in the Pamunkey River as being the ancient seat of Opechancanough and which, as noted, is located in the vicinity of The Island Farm and the community of Pampatike. This same area is depicted on Herman's map with Native-style longhouses and labeled Manskin Indians, with the island given the name Guttins Island. Downriver, Herman notes the Pamaomeck or Pamunkey settlement in the vicinity of the present Pamunkey Reservation. Along the south side of the Mattaponi River, Herman depicts a similar settlement of "Indian Land" near present day Aylett a few miles northwest of where the Upper Mattaponi presently reside in Adamstown.

Additional historical records include land records making reference to Indian towns, paths, and places. A list of Native place names found in today's modern landscape can be found in Appendix IV. The sheer size of this list is a testament to the fact that Native place names were not entirely Anglicized, especially in comparison with other areas of the Chesapeake. Where possible, the locations of towns mentioned in records were plotted as further evidence for an indigenous landscape that may not be known either archaeologically or through other written accounts. Placement of these locations in some cases serves as a best guess given the vagueness of some early records (Figure 30).

The locations of towns and other settlements along the Mattaponi River suggest the mobility of native people in the landscape. There are several references to differing locations of Mattaponi/Chickahominy settlements along both sides of the Mattaponi River and as far north as the Rappahannock River. The Augustine Herman map appears to show the location of a Mattaponi/ Chickahominy settlement visited by Quaker missionary Thomas Story in 1698/99. Story noted the reservation was between the two Herring creeks and the Indians had been there since at least 1677 (McIlwaine 1925-1945:II:226).

As previously noted, an earlier Mattaponi fort/town is also recorded as being on Piscataway Creek in present-day Essex County. In 1662, the Mattaponi King, who was reported to be living in an English-style house, filed a complaint that an Englishman burned his house down in an effort to drive the Mattaponi away. Deeds for this land dating as late as 1735 make mention of the "Town Marsh" located near this Mattaponi/Chickahominy settlement, situated on the south side of Piscataway Creek between Dunbrooke and Millers Tavern. These records infer that, prior to 1662, the Chickahominy people relocated or were forced to the Mattaponi River, and then to Piscataway Creek where they became known to the English interchangeably as Mattaponi/Chickahominy. By 1662, Englishman Edward Dennis had seated himself "in the Indian towne of Chickahomini." Between 1662 and 1698, the Mattaponi's main settlement had relocated between the two Herring creeks near modern-day Aylett.

Figure 29. Augustine Herman map, Pamunkey Neck focus, 1670/1673.

Several modern roads may be historic Indian paths mentioned in records that connect settlements on the Mattaponi River with those on the Rappahannock River. In 1667 and again in 1691, patents describe a path from Portobago Bay to the Mattaponi/Chickahominy town. This path may be Routes 625 and 721 which today run through the towns of Central Point and Newtown before heading towards Route 360 near the crossing of the Mattaponi River by Aylett. This path would have also gone past the post-1667 Rappahannock Reservation strad-dling Essex and King and Queen counties near Indian Neck.

The 1677 Treaty of Middle Plantation held that no colonist could settle within three miles of any Indian town. Tribes were allotted 50 acres per bowman. At this time, the main Pamunkey settlement was in the vicinity of the present Pamunkey Reservation or nearby at Old Town farm. The Mattaponi settlement depicted on the 1670 Herman map was located at Aylett near Aylett Creek, one of the Herring creeks mentioned in a contemporary description. This location was affirmed and surveyed as the Mattaponi reservation in 1701 and 1702. The present reservation is located nearly 11.5 miles downriver from this location. The movement of the Mattaponi was precipitated by ongoing displacement and harassment by colonists. The Mattaponi were displaced a number of times and are therefore tied to places in several locations along the river that bears their name.

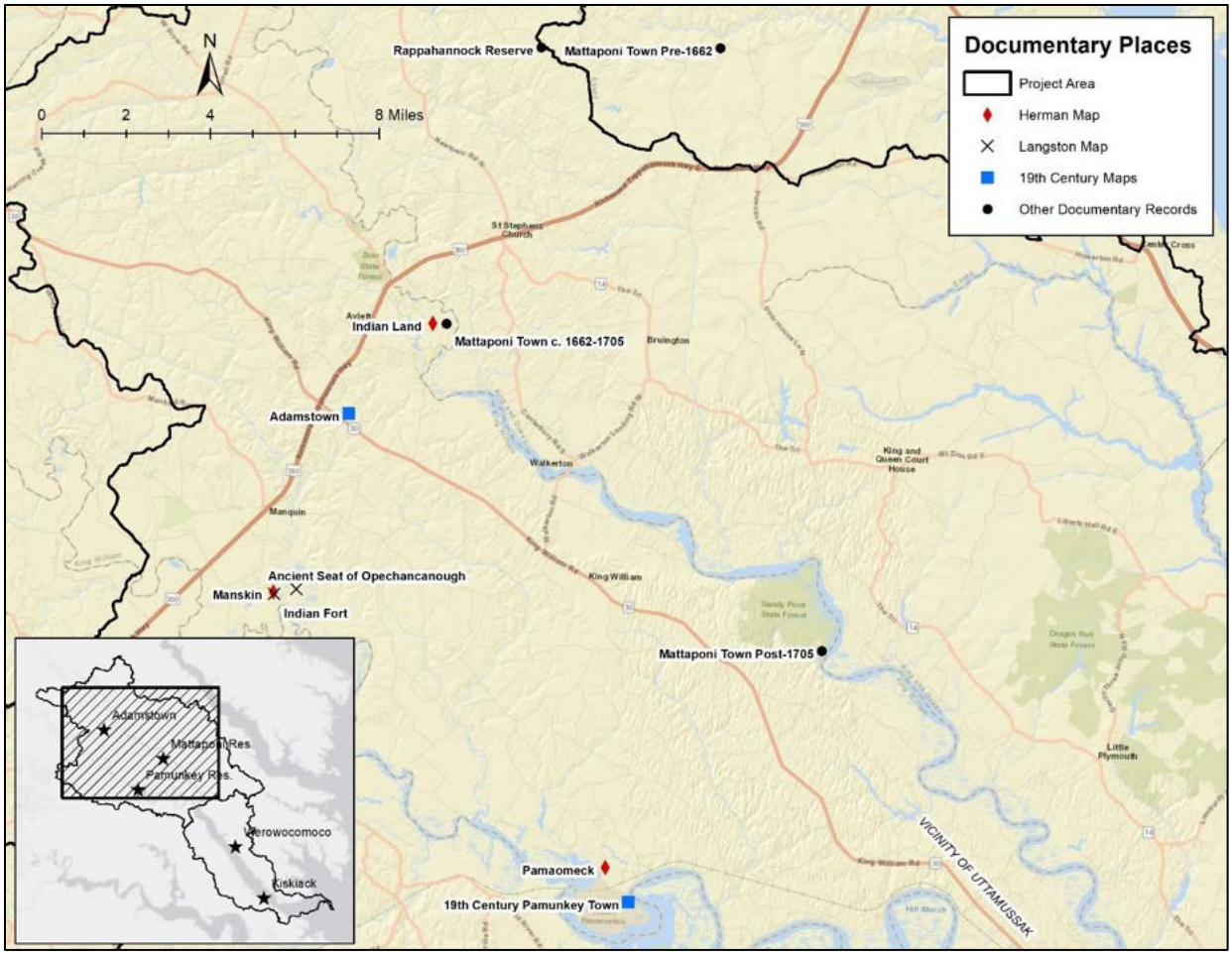

Figure 30. Historically known Native towns/places.

A three-mile radius circle from any single point would measure just over 18,000 acres. A three-mile radius from the Pamunkey and Mattaponi settlements that existed at the time of the Treaty of Middle Plantation is shown in Figure 31. In 1701, both the Pamunkey and Mattaponi/Chickahominy reservations were formally recorded. In 1702, the Mattaponi/Chickahominy reservation was reduced from the three-mile buffer to just the lands between Aylett and Dorell creeks, probably because the population had decreased to 30 bowmen (Figure 32). At 50 acres per bowmen, that reduced the acreage of their reservation to 1,500 acres. Further, in 1705, legislation was passed by the assembly restricting reservation land to the side of any navigable river on which a town is situated. In the case of the Pamunkey, that meant only the north side of the Pamunkey River, and for the Mattaponi, only the south side of the Mattaponi River. By this time, the Mattaponi may have already relocated to the area of their present reservation location. The post-1705 buffer and reservation lands are shown in Figure 33 along with the current reservation.

While many of the people of the Mattaponi resettled near the present Mattaponi Reservation, not all did. The Upper Mattaponi people of Adamstown remained close to the earlier reservation near Aylett. Today, the Upper Mattaponi people still have a connection to the old town, where baptisms took place within the bounds of the old reservation on Aylett Creek and hunting grounds remained in use as recently as 20 years ago. A sizeable population of people are noted on Civil War era maps near present-day Central

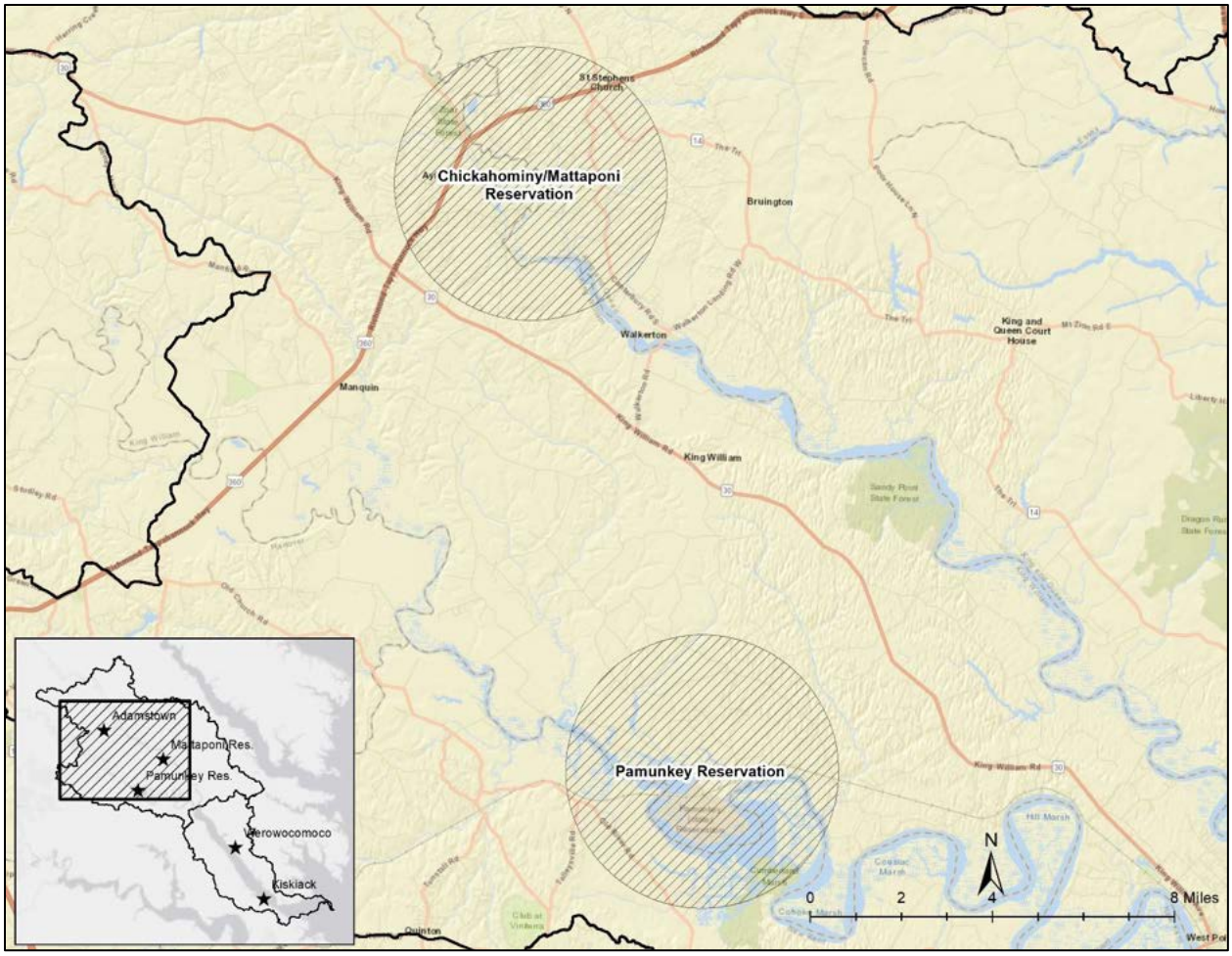

Figure 31. Three-mile buffer Native reservations, pre-1705.

Garage in the area that became known as Adamstown and is where the Upper Mattaponi remain to this day. The historic area known as Adamstown is also shown with the post-1705 reservations of the Pamunkey and Mattaponi in Figure 33.

Non-Tribal Stakeholder Information

Non-tribal stakeholders provided a range of valuable input for the project. This included information directly related to defining the greater York River ICL; partnership opportunities; information on regional conservation and preservation programs and opportunities; and important resources for environmental and ethnobotanical data. Data and suggestions related directly to defining the ICL are included in this section.

Stakeholder comments at the Upper King William Branch of the Pamunkey Regional Library meeting held on September 28, 2018 included sharing of information regarding specific sites and locations that are not yet part of state cultural resources databases; resources for environmental quality data; information about locally- and state-maintained public boat access; and observations about the lack of

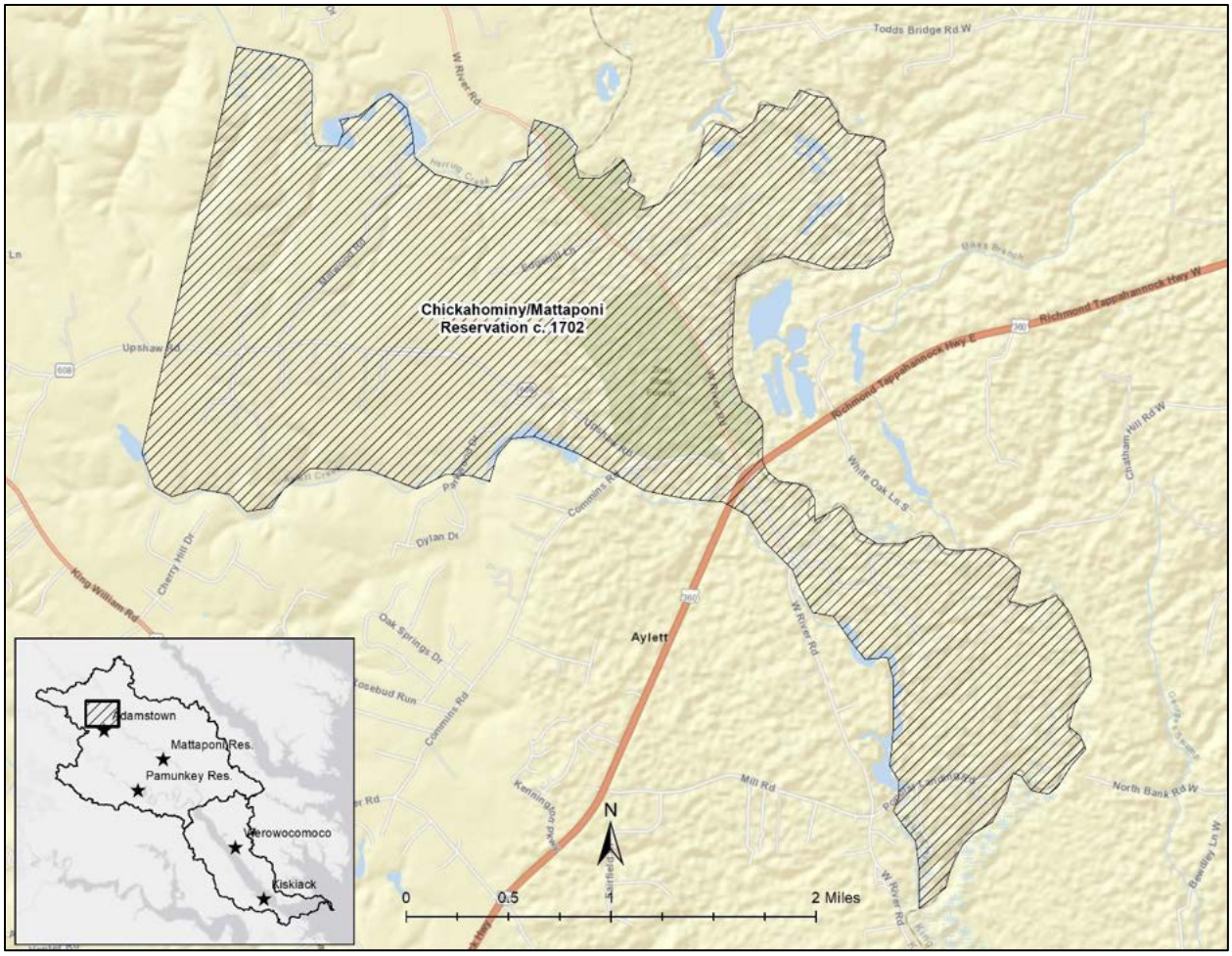

Figure 32. Chickahominy/Mattaponi reservation, between "two Herring creeks."

(invited) representatives from all counties within the large study area. This absence may have been an outcome of a rescheduled meeting when the first meeting was cancelled due to a forecast hurricane.

A representative from the Fairfield Foundation provided the locations of two Late Woodland sites, including a burial site, not yet recorded with the Virginia Department of Historic Resources. These two sites are located in the lower York River valley in Gloucester County. The representative also indicated that easements are pending for the Fairfield property, located in Gloucester County. Additional insights were given to the interpretation of the Werowocomoco site. One theory, held by the former owner of the site, was of an alignment between archaeological features and the angle of the sun during the winter solstice.

The Chief Biologist of the Virginia Department of Conservation and Recreation (DCR) provided numerous contacts and links to datasets useful for identifying natural resources within the Project Area. DCR staff suggested it was better to use the Virginia Environmental Value Assessment by the Virginia Department of Environmental Quality instead of maps of Priority Conservation Areas. Both layers are used to identify areas considered of the highest priority for future conservation planning. A review of each found that the two were nearly identical. Additionally, ethnobotanical data originally collated under the TCP study was reviewed for accuracy by the Chief Biologist. He suggested, and the suggestion is implemented within this report, that environments where ethnobotanicals are found should be cross-referenced with the habitat information from the Digital Atlas of the Flora of Virginia.

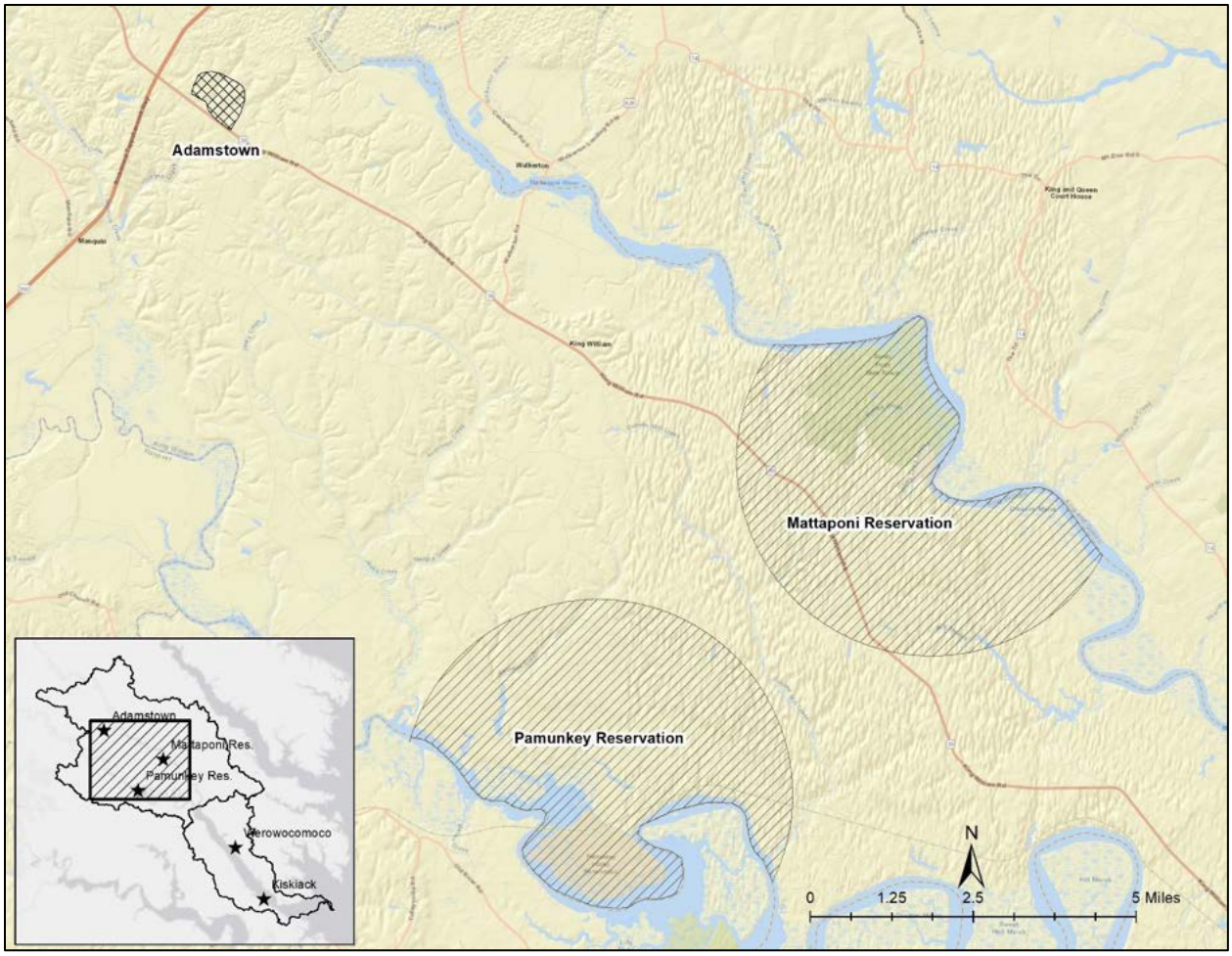

Figure 33. Post-1705 reservation bounds, shown with historic Adamstown.

Representatives of the county planning agencies present at the meeting suggested contacts for getting up-to-date GIS data layers for conservation easements not yet digitized within the available statewide DCR datasets. Additionally, several of these county representatives suggested the inclusion of Federal Emergency Management Agency and Virginia Institute of Marine Sciences data on shoreline erosion to identify threatened areas adjacent to tidal waters.

Ecotourism was a topic of discussion between several of the county planning agencies as well. Groups identified within the project area with an interest in ecotourism include the Middle Peninsula Planning District Commission, King and Queen County Government and their list of *101 Points of Historical Interest*, managers for the town of West Point, and the Friends of Dragon Run.

Non-tribal stakeholders pointed out that most of the conserved land within the Project Area consists of tracts and easements owned by the Nature Conservancy and the Virginia Outdoors Foundation, both private entities.

Potential Partners for the Captain John Smith Chesapeake National Historic Trail

The Middle Peninsula Planning District Commission (MPPDC), based in Saluda in Middlesex County and whose jurisdiction includes King William, King and Queen, Gloucester, and Middlesex counties, has a keen interest in water-based ecotourism. Water access to conserved wetlands plays a vital role in ecotourism. The Town of West Point is also interested in ecotourism in a planned effort to bring more visitors to town. The MPPDC is also interested in promoting canoe trips. The area of West Point is noted by Smith as being an area with a high density of Native settlements, including Uttamussak.

The Friends of Dragon Run operates a website with interpretive information about local flora and fauna within Dragon Swamp, which is considered one of several high priority conservation areas within the Project Area. The Smithsonian Institution has ranked Dragon Swamp second in ecological significance in a study of 232 areas within the Chesapeake Bay watershed. Dragon Swamp was also the historical refuge of Virginia Indian tribes during Bacon's Rebellion. The Friends of Dragon Run partners with the Nature Conservancy, which holds 13,350 acres-worth of easements.

Most of the public water access points within the Project Area are maintained by the Virginia Department of Game and Inland Fisheries. Three of the identified boat landings (Walkerton, Croaker Landing, and Capahosic Beach) are maintained by the local governments in King and Queen, York, and Gloucester counties. The boat ramps at Croaker Landing and Capahosic Beach are the closest to the Werowocomoco site. These locations are ideal starting points for the trail for those interested in the broader Werowocomoco landscape. These public water access points can have an important role to play in the development of the Chesapeake Trail.

Potential Federal partners include cultural resource managers for the Naval Weapons Station-Yorktown. A future partnership with this facility could play a vital role in interpreting the important Native town of Kiskiack, located within the grounds of the naval facility. The facility is also located across the river from the Timberneck property.

Archaeological Site and Survey Data

Online archaeological site and survey data was provided by the Virginia Department of Historic Resources (DHR) (Figures 34 and 35). Archaeological site forms were reviewed to identify those sites with artifacts diagnostic of occupations dating to the Late Woodland and Contact periods (900-1700 CE). Site data was not separated out by site type (such as town or hunting camp) given the variable and incomplete nature of the detail in the existing site forms. Once sites were identified, site boundaries provided in the form of GIS polygon shapefile data were converted to points based on the polygon centroids for each site. This was done both for analytical use and for the printing of maps at large scales. All maps presented publicly and in this report are shown at a scale so as to protect site location data while maintaining the ability to depict their locations for drawing ICL boundaries.

The maps show obvious concentrations of archaeological sites within the Pamunkey Reservation and on the grounds of the Yorktown Battlefield, Yorktown Naval Weapons Station, and US Army facility at Camp Peary. As previously noted, DHR files only show and describe sites that have been formally reported to the agency. The concentration of archaeological sites on federal installations reflects the fact that these properties are subject to Sections 106 and 110 of the National Historic Preservation Act, which trigger archaeological surveys on Federal properties.

The Pamunkey Reservation has also been extensively surveyed, including recent surveys by the William and Mary Center for Archaeological Research (WMCAR) in 2017 and 2018. The urban and exurban areas around West Point, however, as well as the relatively undeveloped portions of the York River

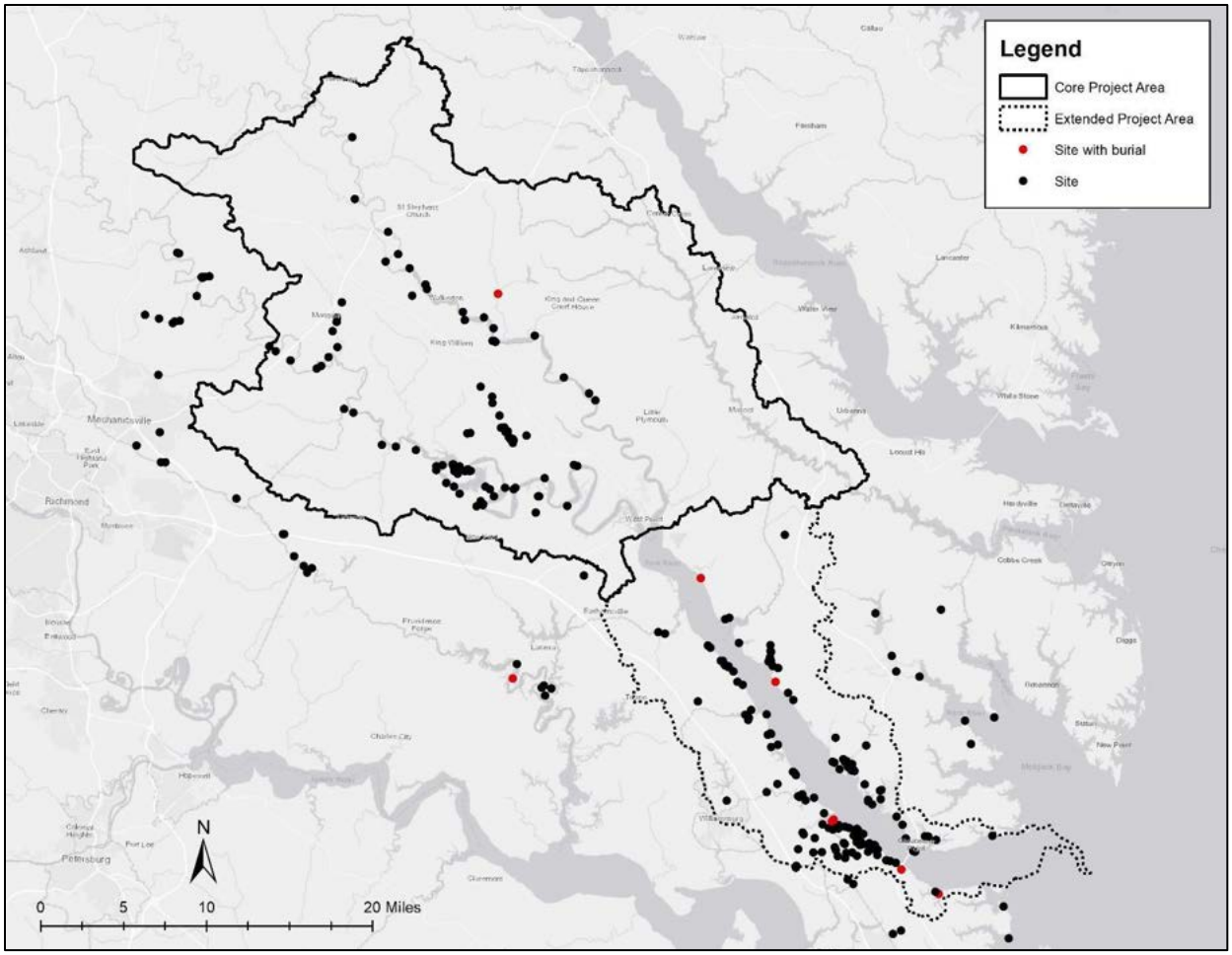

Figure 34. Late Woodland/Contact period (ca. 900-1700 CE) archaeological sites in the Project Area.

valley extending approximately seven miles east of West Point, have not been extensively surveyed. These areas no doubt contain archaeological evidence of past Native occupations.

Soil Productivity

By 1300 CE, corn was becoming ever more essential to the indigenous diet, an important staple for many months of the year, and productive soils for the cultivation of corn were a critical variable for Late Woodland settlement (Rountree and Turner 2002; Rountree, Clark, and Mountford 2007). Using USDA soil spatial and tabular data, each soil type within the Project Area was mapped according to its agricultural potential. Specifically, the estimated yield of corn in a non-irrigated setting for each soil type was given as bushels per acre. Those soils with estimated potential yields of 160 bushels per acre or more throughout the Project Area are shown in Figure 36.

Land Use Classification

Figure 37 depicts the extents of forest cover, barren land, wetlands, and developed, farmed, and open areas (labeled "Current Activity"). Land use data from the National Land Cover Database (NLCD) from 2011 was used and reclassified according to the numerical land use codes used by the dataset. The data consisted of 15 codes that were reclassified as shown in Table 10.

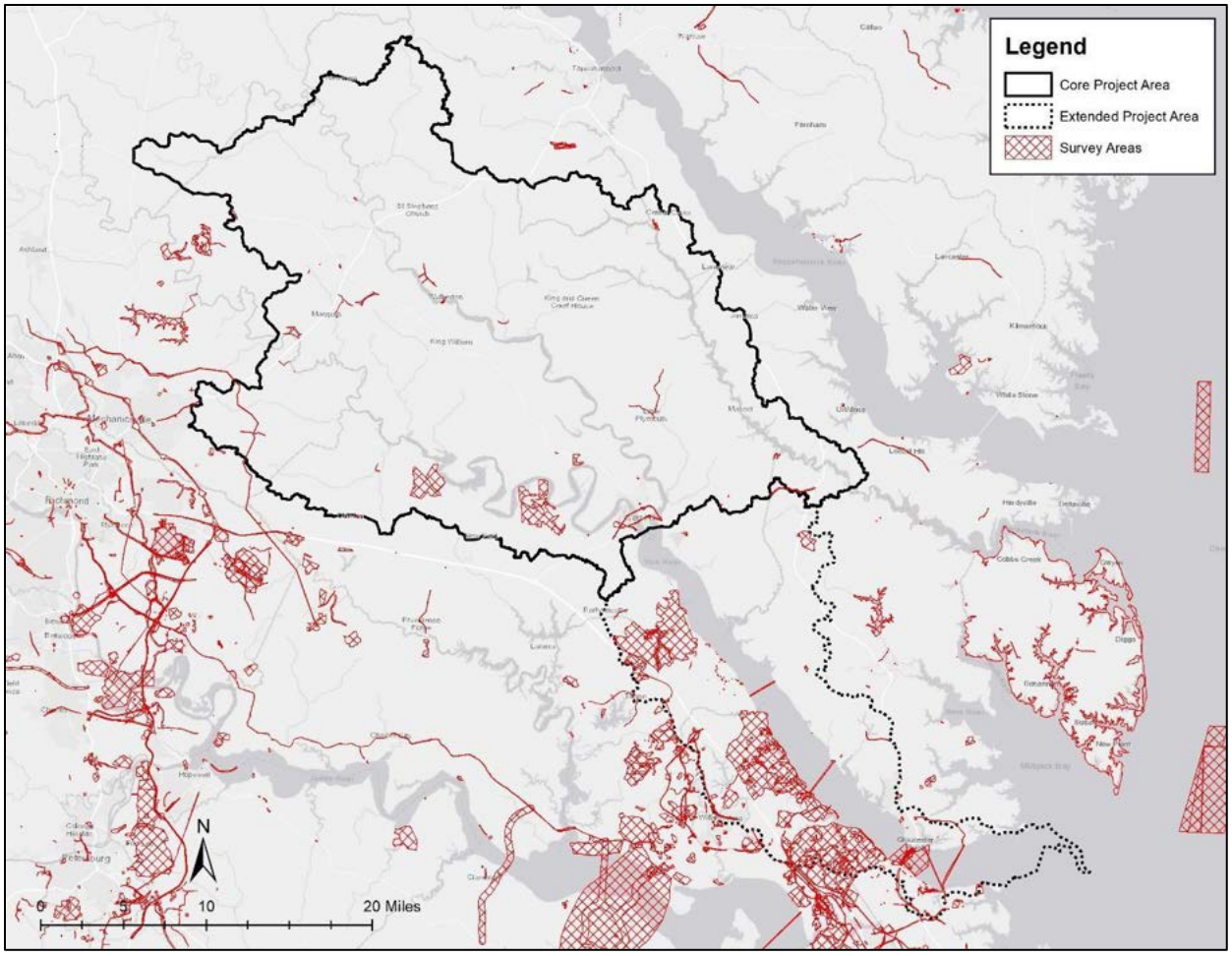

Figure 35. Areas of archaeological survey in the Project Area.

NLCD Code	NLCD Type	Reclass Code	Reclass Type
11	Open Water	2	Wetland
21	Developed, Open Space	0	Current Activity
22	Developed, Low Intensity	0	Current Activity
23	Developed, Medium Intensity	0	Current Activity
24	Developed, High Intensity	0	Current Activity
31	Barren Land	1	Forest Cover/Barren
41	Deciduous Forest	1	Forest Cover/Barren
42	Evergreen Forest	1	Forest Cover/Barren
43	Mixed Forest	1	Forest Cover/Barren
52	Shrub/Scrub	1	Forest Cover/Barren
71	Herbaceous	1	Forest Cover/Barren
81	Hay/Pasture	0	Current Activity
82	Cultivated Crops	0	Current Activity
90	Woody Wetlands	2	Wetland
95	Emergent Herbaceous Wetlands	2	Wetland

Table 10. Reclassified land use data codes.

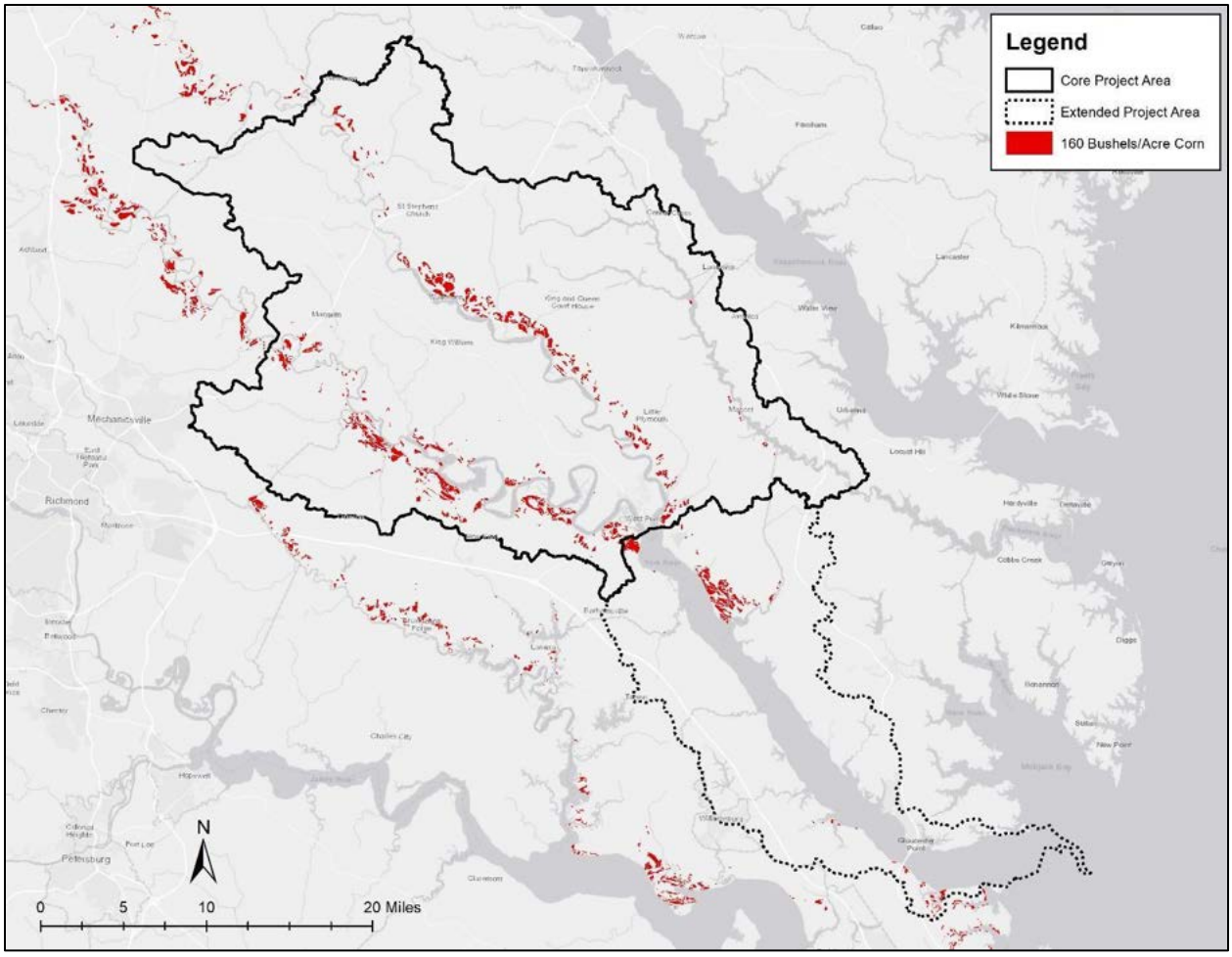

Figure 36. Soils yielding 160 bushels of corn or more per acre in the Project Area.

Wetland/Marsh Data

Wetland data acquired from the National Wetland Inventory Survey (NWIS) is depicted in Figure 38. Wetland data from NWIS is designated by code, which is broken down by wetland system type (marine, estuarine, riverine, lacustrine, and palustrine), and then by subsystem, class, and subclass (see Appendix V for classification system). Sub-systems within the marine and estuarine types include subtidal and intertidal. Riverine systems include tidal, lower perennial, upper perennial, intermittent, and unknown. Lacustrine consists of limnetic and littoral subsystems. Palustrine wetland types have no subsystem, and are broken down only by class and subclass.

The most common marsh wetland types associated with the Project Area watershed are estuarine and palustrine systems, specifically, the estuarine intertidal emergent (E2EM), palustrine forested (PFO), palustrine emergent (PEM), and the riverine tidal emergent (R1EM). These specific wetland designations are what might be subjectively considered visually reminiscent of Native landscapes encountered in the early seventeenth century. Conservation groups argue that wetlands all along main riverways are indicative of the state of tidal and estuarine environments that were once present throughout the Chesapeake.

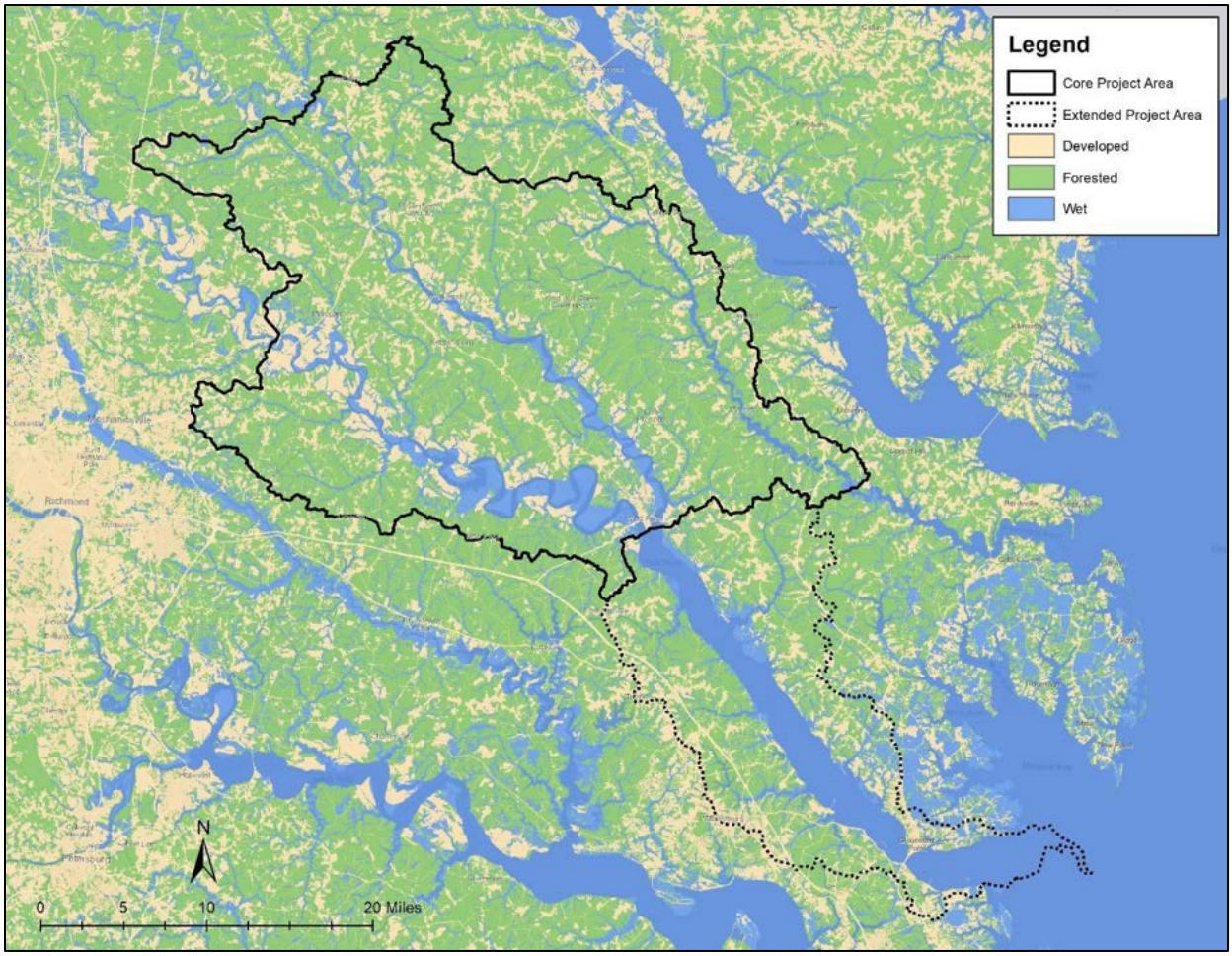

Figure 37. Forest cover, barren land, wetlands, and developed, farmed, and open areas in the Project Area.

Protected Lands

Protected land data from the Virginia Department of Conservation and Recreation (DCR) breaks down protected lands into two types, including conserved lands and easements (Figure 39). Conserved lands consist of Federal, State, local, and private lands, including parks, wildlife management areas, refuges, sanctuaries, military installations, and a number of other land-use types. The majority of conserved land in the Project Area consists of Federally-owned land, including NPS properties and military installations around Yorktown. Private lands acquired for conservation include the Pamunkey and Mattaponi Reservations, several non-contiguous tracts in King and Queen County between Dragon Swamp and the Mattaponi River, and a tract owned by the Friends of Dragon Run.

Easements consist of Federal, State, local, and private easements. The majority of conservation easements in the Project Area are held by the Nature Conservancy and the Virginia Outdoors Foundation. Both organizations are publicly-chartered organizations. Other easements include those held by the Virginia Department of Historic Resources.

The Virginia Department of Game and Inland Fisheries has also identified Priority Conservation Areas (PCAs) throughout the state. The PCAs are ranked on a scale of one to five, with one being of least

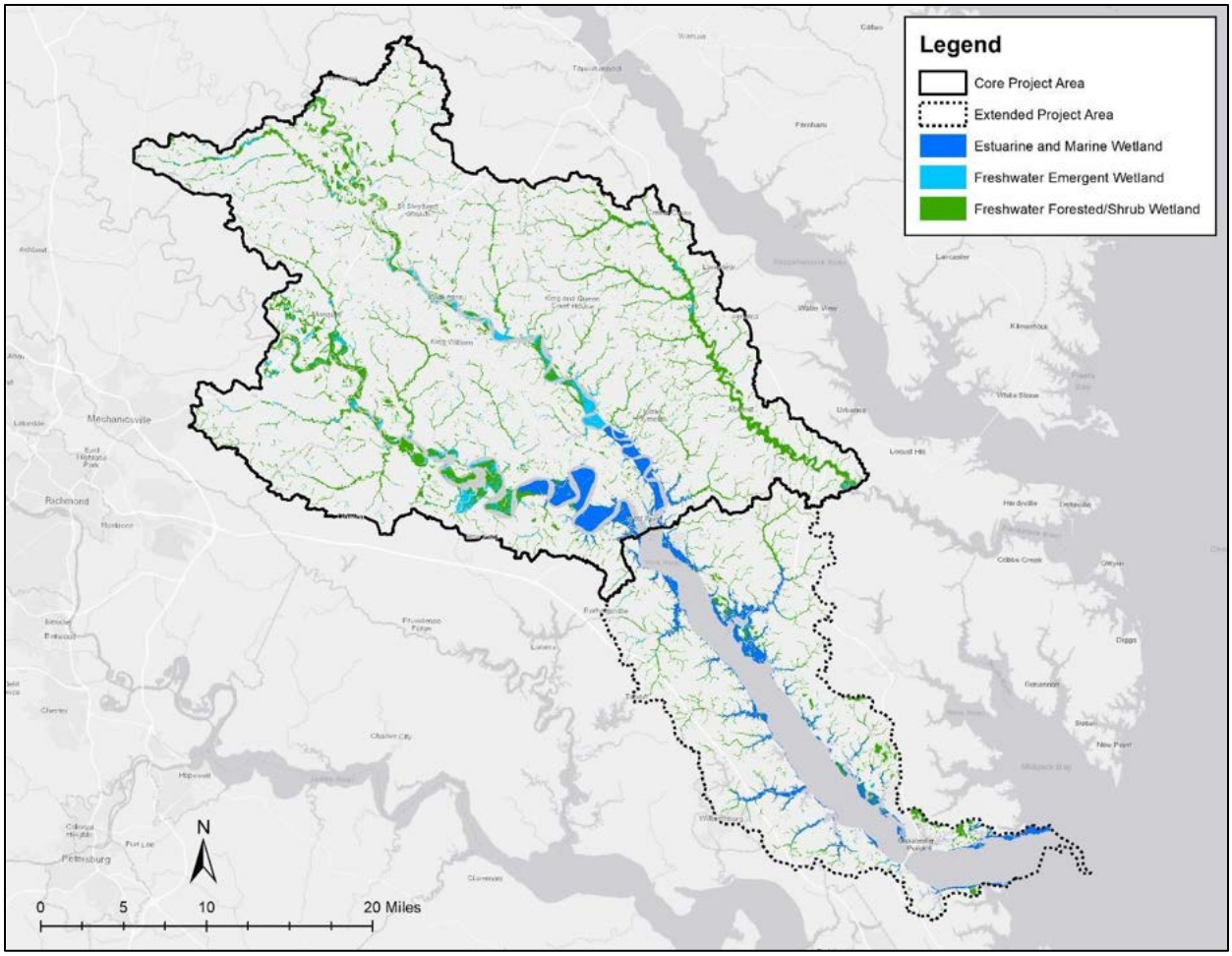

Figure 38. Wetland data from the National Wetland Inventory Survey in the Project Area.

concern to five being the highest priority. Those considered high priority are defined as lands and surface waters that harbor important wildlife, plants, and other natural communities. This data is compiled from habitat maps, water bird surveys, the National Wetland Inventory, important bird areas mapped by the Audubon Society, and the Virginia Conservation Land Needs Assessment. Those ranked five, or highest priority, are shown in Figure 40. The ranking and assessment of the highest priority PCAs is nearly identical to areas ranked as "Outstanding" level of importance by the Virginia Department of Environmental Quality's Virginia Ecological Value Assessment (VEVA). The VEVA score is also ranked on a scale of one to five.

Public Access

Public boat ramps which can be used to access the Chesapeake Trail along with public land trails are shown in Figure 41. This data was gathered from the Virginia Department of Game and Inland Fisheries.

Four public boat ramps are located along the Mattaponi River at Melrose, Waterfence, Walkerton, and West Point. A single public boat ramp is present along the Pamunkey at Lester Manor, adjacent to the Pamunkey Reservation. Four public boat ramps are accessible along the York River at Tanyard on the Poropotank River, Croaker Landing at York River State Park, Capahosic Beach, and Gloucester Point near

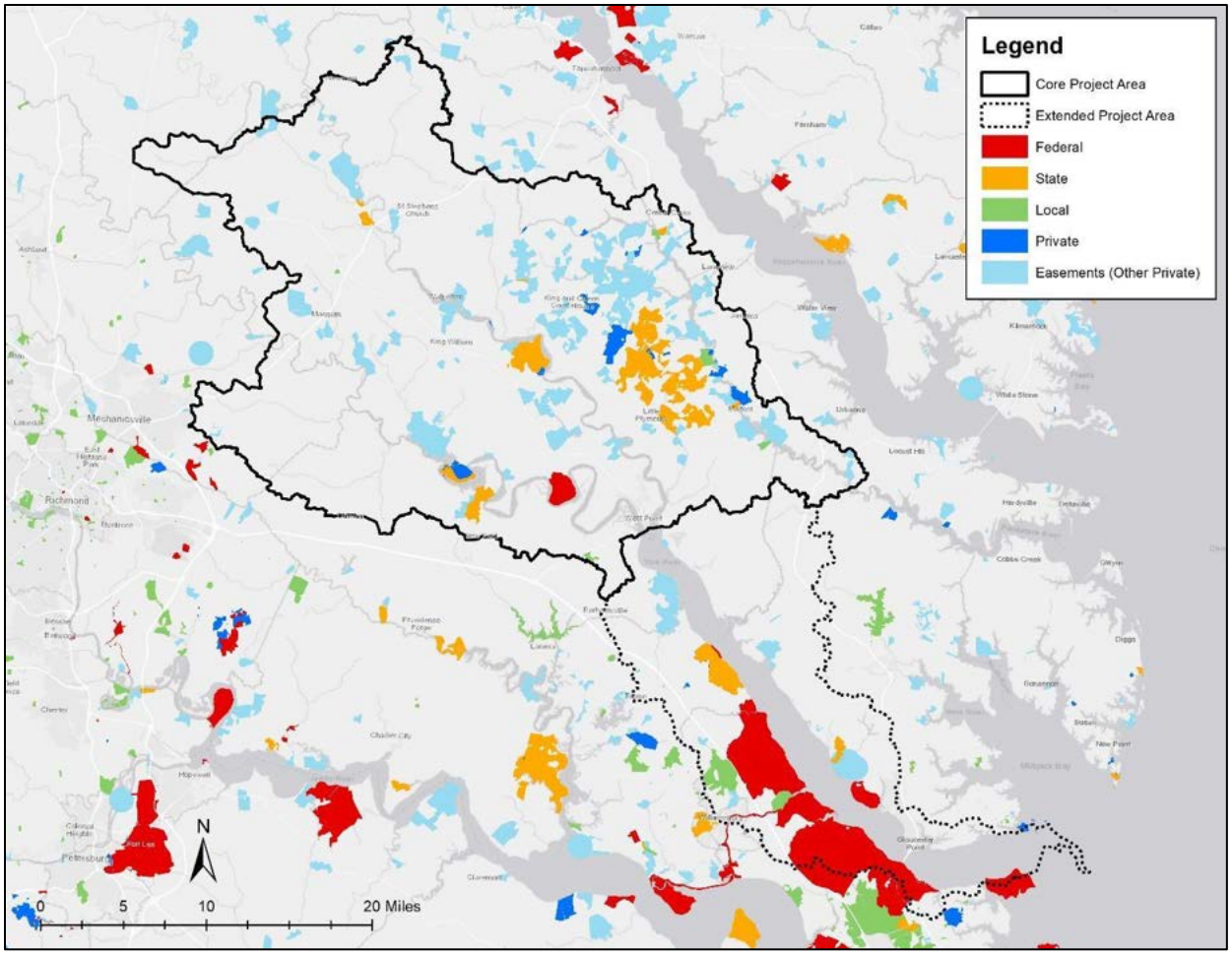

Figure 39. Protected land data from the Virginia DCR in the Project Area.

the George P. Coleman Bridge opposite Yorktown. A kayak launch is available along the Mattaponi River at Zoar State Forest near Aylett. A kayak/canoe launch is proposed for the recently acquired Middle Peninsula State Park near Rosewell and the Timberneck tract just downriver, for which master plans are currently in development.

Fifteen trails are identified throughout the Project Area and include those found at York River State Park, King and Queen Fish Cultural Station, Zoar State Forest, Yorktown Colonial Park, Capahosic Beach Boat Landing, Glenn Campus of the Rappahannock Community College, Gloucester Point Beach, Cumberland Marsh Preserve, Dragon's Lair 1, Rosewell, Walkerton Landing, Waterfence Landing, Melrose Landing, Goodwin Islands, and New Quarter Park. Some of these trails, such as Capahosic Beach, Walkerton, and Waterfence, are actually boat landings and are not land trails.

Additional Considerations

Project efforts to pull together non-tribal stakeholders were impacted when meetings had to be rescheduled due to a hurricane threat. There were a number of stakeholders who could not attend the rescheduled meeting. These stakeholders include members of the Middle Peninsula Planning District Commission, the Middle Peninsula Alliance, and additional representatives of the Naval Weapons Station-

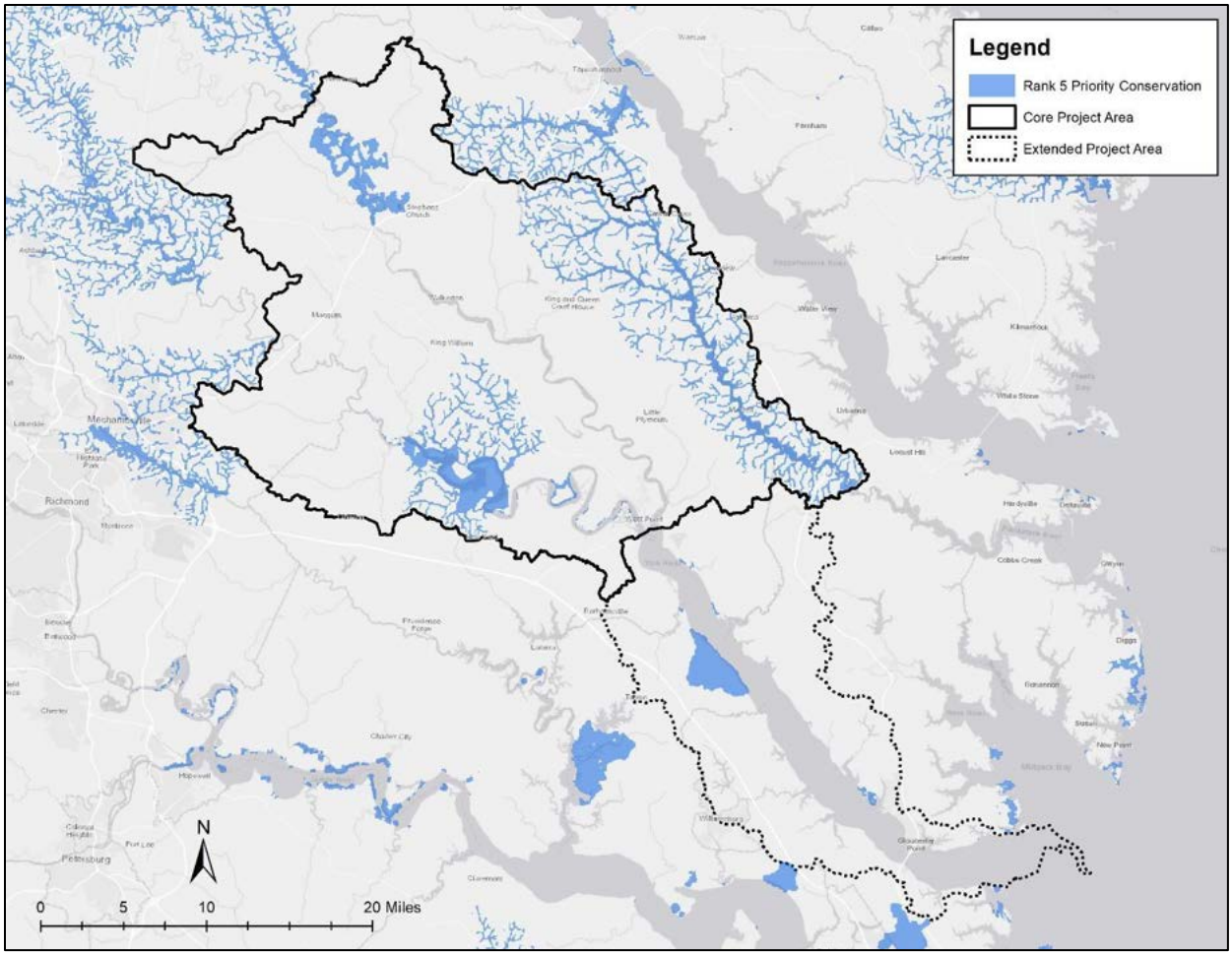

Figure 40. Rank 5 Priority Conservation Areas in the Project Area.

Yorktown. Additionally, the Middle Peninsula Economic Development Resource Organization, including six counties and two towns, view tourism as an important contributor to the region's economic development.

The Middle Peninsula Alliance is especially interested in the region's tourism potential and they include the contacts for the peninsula's tribes on their website. In 2019, the Virginia Department of Conservation and Recreation acquired the Timberneck Farm property, a 644-acre tract located on Timberneck Creek in Gloucester County approximately 14 miles by car south of Werowocomoco. The property has been given the tentative name of Machicomoco State Park and has been billed as the "Gateway to Werowocomoco." Material available online through DCR indicates that, "respecting the sacred nature of Werowocomoco, and the Tribes' desire for it to remain clear of interpretive buildings," the new state park presents opportunities "upon which to develop interpretive elements" (Virginia DCR 2018)..

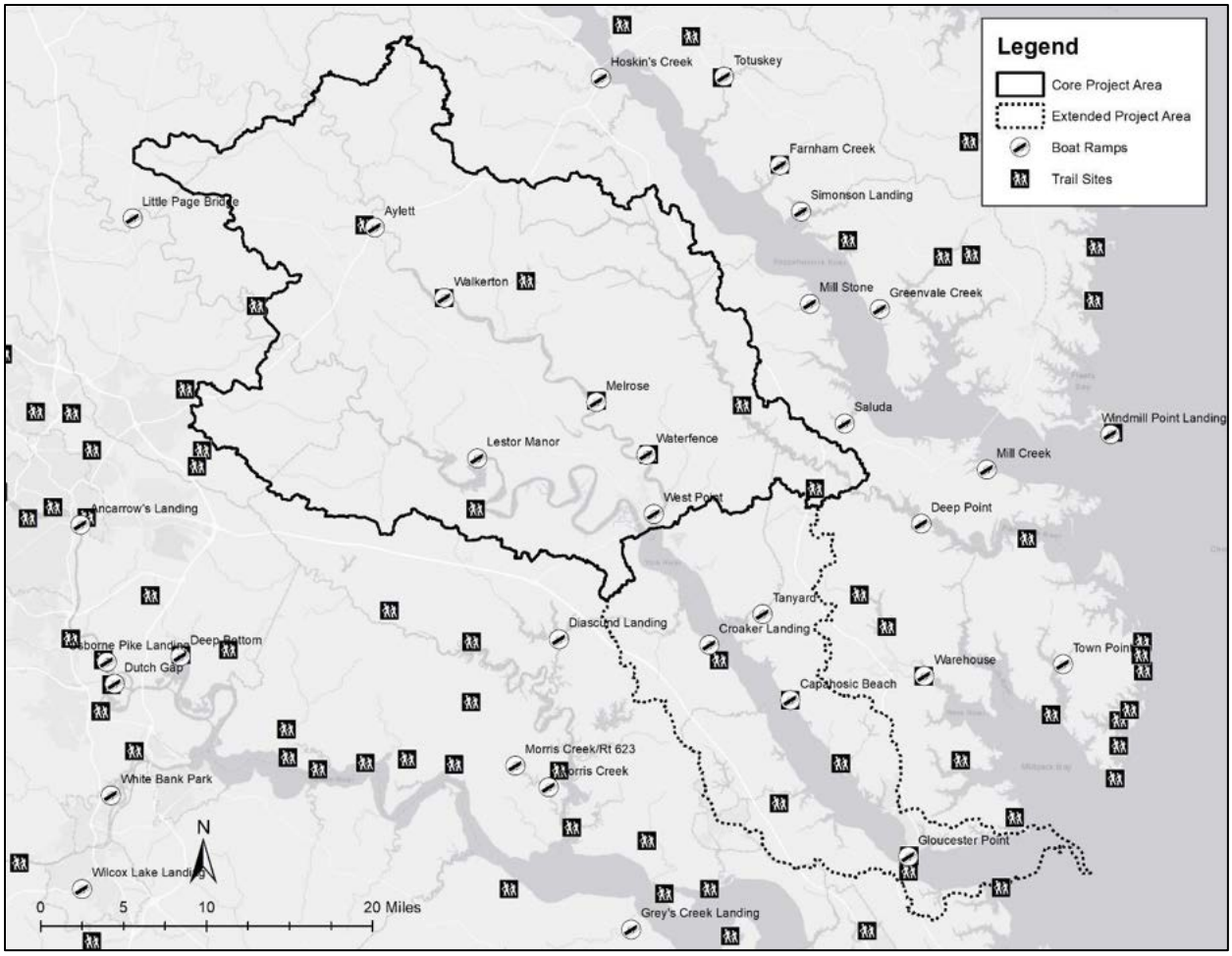

Figure 41. Public water access and land trail locations in the Project Area.

Figure 42. Aerial view of Timberneck Farm, Gloucester County.

CHAPTER VI
GIS ANALYSIS

CHAPTER HIGHLIGHTS

- Known late period (ca. 900-1600 CE) archaeological sites within the Project Area are found on soils with modern-day yield estimates averaging 105.1 bushels of corn per acre.
- Known late period archaeological sites within the Project Area are located primarily along lower lying areas adjacent to waterways with an average elevation of 8.3m (27.2 ft).
- Known late period archaeological sites within the Project Area are located in close proximity to wetlands/marshes with an average distance of 120.4m (395 ft) and a median distance of 92.2m (302.5 ft) from site center to these resources.
- The association of soil productivity, elevation, and proximity to wetlands/marshes is prevalent along the Pamunkey and Mattaponi rivers and the north bank of the York River. On the south bank of the York, the association of these resources is strongest in the area surrounding the settlement of Kiskiack.
- Viewshed analysis of the Kiskiack area demonstrates visibility between smaller Late Woodland period (900-1600 CE) sites and the larger core settlement of Kiskiack and nearby ossuaries.
- Viewshed analysis of Werowocomoco reveals a possible relationship between "chiefly" architectural features and reinforced perspective views of them from sites across the York River.

This chapter describes the analyses undertaken to identify spatial relationships among the many fragments of information collected about the Native landscapes of the York, Pamunkey, and Mattaponi river watersheds. Some of the discussion is admittedly technical – GIS technologies rely on the power of spatial statistics to elucidate patterns and relationships otherwise invisible or difficult to discern through visual means only. These patterns can be used to infer historical settlement preferences and decision-making practices and, importantly, link them to contemporary places and practices. While the technical discussion is necessary so that other researchers can evaluate the findings of this project, every effort has been made to summarize the findings in plain language.

Environmental Variables

Strickland (2012) and others have demonstrated that, in the Middle Atlantic, a correlation exists between archaeological sites (especially town sites) and agriculturally productive soil. There may be other soil attributes attractive for settlement during the Late Woodland period. Therefore, as part of this study, the distribution of archaeological sites within the Project Area was examined for any statistically significant correlations with soil attributes mined from soil data found on the United States Department of Agriculture's (USDA) Natural Resource Conservation Service (NRCS).

Data from the USDA usually comes in two forms: State Soil Geographic data (STATSGO) and Soil Survey Geographic data (SSURGO). STATSGO data consists of broadly generalized classifications while SSURGO provides more detail at the county level. For the purposes of this exercise, SSURGO data was used. An earlier attempt by Sanford and Klein (1994) to use STATSGO data to identify culturally significant "soil associations" in Richmond County on the Rappahannock River proved to be less useful than anticipated. Sanford and Klein's work was informed by the work of Stephen Potter (1993:35), who

argued that individual soil types (such as SSURGO data) was too specific for use in predicting site locations. On the other hand, it appears that soil associations, or STATSGO data, are far too broad a categorization to be of use.

A previous ICL study of the Nanjemoy and Mattawoman creek watersheds along the Potomac River in Maryland, however, found that specific soil types identified through SSURGO data proved useful in identifying sites on particular soil types (Strickland, Busby, and King 2015). These soils were generally found to have similar characteristics, including moderately well- to well-drained sandy and silty loams on predominantly flat landforms. The same was demonstrated with the ICL study of the Rappahannock watershed (Strickland et al. 2016). It is expected that the same could be demonstrated in the York, Pamunkey, and Mattaponi river valleys.

Soil productivity (as opposed to soil types) has also been demonstrated to be important for determining settlement location. For the Project Area, certain soil types are capable of producing up to 160 bushels per acre. These areas of very productive corn growing soils were noted by Rountree, Clark, and Mountford (2007) in their analysis of settlements identified by Smith. The relationship between soil productivity and other factors, however, is complicated. In the lower Potomac valley, Strickland (2012) found that recorded sites were more closely correlated to soils with productivity values between 100 and 120 bushels per acre, although there were many places where those values were exceeded, up to 140 bushels per acre.

The 2015 Nanjemoy/Mattawoman ICL study found that archaeological sites are generally found in areas of high agricultural productivity, but productivity appears to be just one of several drivers for determining settlement location. Soils in the Potomac valley with high agricultural potential but that are not well drained, for example, have fewer archaeological sites located on them. The 2016 Rappahannock ICL study found that there was a strong correlation between settlement location and high-yield corn growing soils. In that study, 35.2% of known Late Woodland archaeological sites were found on soils with the highest potential productivity values (between 140 and 160 bushels per acre of corn), despite the fact that those types of soils only make up 8.5% of the total Project Area (Strickland et al. 2016:97).

Soil datasets within the Project Area are incomplete. Many soil types, for example, have not been rated for agricultural productivity. Unrated soil types make up 32.5% of the Project Area, or roughly a third of all soils. Additionally, soil data is not available for certain military installations, including the Camp Peary Military Reservation, Cheatham Annex Naval Supply Center, Yorktown Naval Weapons Station, and the U.S. Coast Guard Reservation near Yorktown. These soils are all classified as NOTCOM soils, indicating that no data exists for those particular areas. Sites within these areas were not included in this analysis of soil yield estimates in an effort to limit skewed results.

Bearing these considerations in mind, to begin testing site locations for associations with agricultural productivity, SSURGO data was parsed via the Soil Data Viewer extension for ArcGIS developed by the USDA. This allowed the estimated yield tabular data to be combined with the spatial data layer for analysis. Further processing of this data was done by reclassifying the data according to five categories set at arbitrary intervals (Table 11).

Reclass. Cat.	Yield Estimates (Bushels/Acre)
1	8-81
2	81.01-106
3	106.01-119
4	119.01-120
5	120.01-160

Table 11. Reclassified SSURGO soil data for use in ArcGIS.

The values of the reclassified soil data at each archaeological site point served as the basis for the analysis. Statistical correlations were measured using a Kolmogorov-Smirnov test (KS-test). A KS-test aims to compare and measure the cumulative percentages of observed instances (archaeological sites) against the land area of each rank order class of a given variable, such as yield estimates. Ordinal

data like this is best tested using a KS-test rather than the traditional chi-square test, which is best used with nominal data. A total of 126 archaeological sites within the Project Area (excluding those on soils that are not rated and/or on NOTCOM soil areas) were tested for their associations with soil productivity. These sites were tested against the background population derived from the land area within each productivity category. This test would serve to identify whether there was a statistically significant deviation from what would be expected from a random distribution of archaeological sites.

Surprisingly, the results of the test revealed that there was no statistically significant correlation between the productive soils and archaeological sites at a significance level of 0.001 (99.9% confidence level). This does not necessarily mean that sites are not found on agriculturally productive soils. Sites that are located on soils without productivity estimates were excluded from the dataset, and most of the rated soils are fairly agriculturally productive. What this test implies is that there was no trend with site placement and the *most* productive soils. In fact, soil classes 2 through 5 (see Table 11) are all soils that could be objectively considered agriculturally productive, with estimated yields greater than 81 bushels of corn per acre. The average estimated yield among all 126 site points is 105.1 bushels per acre. This is similar to the results of the Rappahannock watershed, which averaged 104.5 bushels per acre.

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The same method used to determine correlations between the distributions of archaeological sites and corn soils was also applied to other environmental variables, including elevation and proximity to wetlands. For elevations, a digital elevation model was reclassified into five categories based on quantiles, or partitions of roughly equal measure. These reclassified values are shown in Table 12. Because the Project Area extends from the mouth of the York to just short of the fall line, the overall elevation makeup changes as one moves further west, where higher elevations are more prevalent. Elevation statistics for each county are presented in Table 13. Archaeological sites outside of the Project Area were included in the analysis of each county, comprising a total of 281 sites. For overall statistics, only those 233 sites within the Project Area are shown.

Reclass. Cat.	Elevation Values (Meters)
1	0-9.7
2	9.7-21.2
3	21.2-30.6
4	30.6-40.4
5	40.4-70.7

Table 12. Reclassified elevation data for use in ArcGIS.

County	Average Elevation	Minimum Elevation	Maximum Elevation	# of Sites
Gloucester	6.2	0	29.1	57
Hanover	20.4	10.6	52.5	18
James City	10.3	0.8	22.0	13
King & Queen	5.7	0.4	12.7	17
King William	10.9	0	31.1	53
New Kent	7.0	0	26.3	36
York	9.9	0	52.5	87
ALL	9.4	0	52.5	281
PROJECT AREA	**8.3**	**0**	**31.1**	**233**

Table 13. Summary of elevation results by county in meters.

The KS-test revealed a correlation between archaeological sites and elevation. The average elevation for the 233 sites in the Project Area was 8.3 meters above mean sea level although each elevation category comprised roughly equal land area. A total of 66.1% of sites were found in category 1 (elevations between 0 and 9.7 meters). The highest elevation of any site was 31.1 meters above mean sea level. The results reveal a high correlation between recorded sites and low-lying elevations, typically around 9.0 meters in elevation. All of the counties had similar results with the exception of Hanover County, located the furthest upriver. There are 18 Late Woodland (900-1600 CE) sites recorded in Hanover County, which includes those outside of the Project Area. The highest elevation of any site is 52.5 meters above mean sea level with the lowest site elevation at 10.6 meters, and the average is 20.4 meters.

Proximity to wetlands, including marshes, freshwater creeks, and streams, was also tested using National Wetland Inventory Survey data. Distance from these resources to archaeological sites was calculated using Euclidean distance models. Euclidean distance is the most basic distance calculation used with spatial data. Within GIS, this creates a raster dataset wherein each pixel or cell represents the distance to a source location, or wetland features. As with the digital elevation model, this Euclidean distance raster was reclassified into five quantiles of roughly equal area and are presented in Table 14.

Reclass. Cat.	Wetland Proximity (Meters)
1	0-37
2	37-130
3	130-241
4	241-396
5	396-1577

Table 14. Reclassified wetland proximity values for use in ArcGIS.

The results of this test also revealed a statistically significant correlation between the two variables. The average distance to wetlands from the archaeological sites was 120.4 meters (395.0 ft) with a median distance of 92.2 meters (302.5 ft). Sixty-six percent of all sites are located between 0 and 130 meters (categories 1 and 2) from a wetland and almost 20% of sites are located within 37 meters (121.4 ft) (category 1) of a wetland. Only six sites, or 2.6% of the total, were found to be located in category 5, with the most distant site lying about 569 meters (1,866.8 ft) from a wetland, a distance of just over a third of a mile. To put this into perspective, the average walking speed of a person is about 1.4 meters per second. With an average distance of 120.4 meters to marshes and other wetlands, this would translate to a travel time of 1.43 minutes. Likewise, to travel the maximum distance to a wetland observed among all site points, the travel time is still under seven minutes.

Complicating this analysis is the fact that archaeological site types are unknown, forcing the analysis to regard the 233 sites in the Project Area as the same. A town settlement no doubt has different soil and elevation requirements than a winter hunting camp. Distinguishing site types, however, can be difficult when evidence for each site typically consists of unsystematically collected and often poorly reported surface finds.

In the York, Pamunkey, and Mattaponi river valleys, the sensitivity model (from a visual perspective) appears to indicate that areas of high sensitivity are greater on the north bank of the York River from its mouth to West Point (Figure 42). Along the south bank, areas of high sensitivity are greatest from just west of Yorktown to Skimino Creek, a little more than a mile southeast of York River State Park. Smith recorded only one settlement on this side of the York River, Kiskiack, which was located on what is now the Yorktown Naval Weapons Station (see Figures 1 and 28). The lack of settlements other than Kiskiack is an intriguing observation. Archaeological evidence points to numerous sites on both sides of the York (see Figure 34) so this discrepancy must be explained. It is possible that larger more year-round settlements were more numerous on the north side.

Topographically and ecologically, the two sides of the river are different when it comes to shoreline elevation and the presence of marshes. The north bank has larger areas of low-lying land directly adjacent to the river, with numerous and ample potential landing places for canoes. Large and expansive marshes are also more prevalent on the north bank, whereas marshes along the south bank are restricted to the mouths of tributary creeks. The Werowocomoco site, on the north bank of the York, is directly across Purtan Bay from the largest series of marshes in the York River. Today, this marsh surrounds what historically has been called Purtan Island. The Mattaponi and Pamunkey rivers are home to many large marshes on both sides of the river, the largest along the Pamunkey. It is worth noting that Smith observed higher densities of settlements along the Pamunkey than along the York and this may be partially due to the abundant natural resources and landforms, including marshes, found in the Pamunkey valley.

One of the goals of the ICL priority report completed in 2016 (Strickland and King 2016) was to identify the ICL sensitivity of the tidal Chesapeake region. This was based in large part on testing

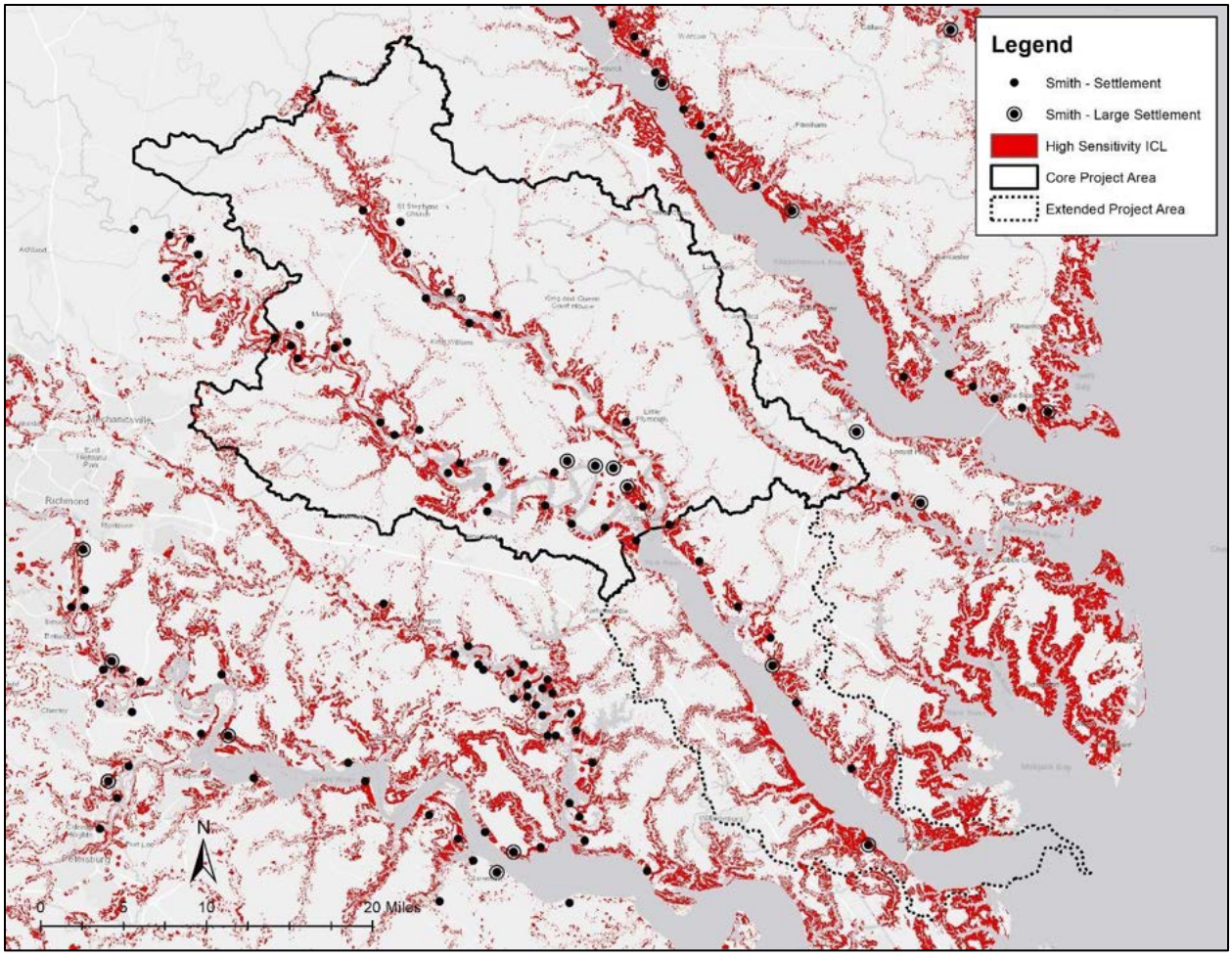

Figure 43. The ICL Sensitivity Model.

recorded archaeological resources against ICL criteria, including elevation, proximity to marshes, proximity to transportation tributaries, and ground slope. High or moderate ICL sensitivity reflected where these criteria co-occurred most frequently. Ideally, the model should be able to predict 80% of known archaeological sites while keeping area coverage of the model at or below 25% of the entire land area. The results of the model, using ICL criteria, came close to this goal, accurately identifying 77% of sites within 25% of the entire land area.

Viewshed Analysis

Discussions with stakeholders at DHR during the Rappahannock ICL study revealed the possibility that Late Woodland (900-1600 CE) towns may have been distributed in areas with open vistas and large viewsheds along the Rappahannock shore (Chris Egghart, personal communication, 2016; Strickland et al. 2016). Viewshed analysis has proven to be a useful tool for examining archaeological resources as they relate to "intervisibility," or two places being visible from one another. This visibility could reflect spiritual and/or ritual significance, stewardship of economic and environmental resources, the ability to communicate, and/or defensibility. Applying a similar analysis to the York/Pamunkey/Mattaponi may prove useful in interpreting known archaeological resources or identifying areas for future archaeological investigation.

Viewshed analysis within GIS is used to identify visible areas within a landscape from user-specified locations, known as observer points. The required inputs for this type of analysis include both the observer points and a digital elevation model (DEM) (O'Sullivan and Unwin 2003; Wheatley and Gillings 2003). A DEM is a raster map wherein each grid (which can be imagined as a pixel in a digital image) represents a certain elevation value. Viewshed analysis uses observer points as a point of origin where profiles are examined between every grid cell within the DEM (Figure 43). Observer points can be modified to include attribute data that relates to how the viewshed function is processed and restricted. These attributes include height of the observer above ground level (OFFSETA), the height of a target object or place (OFFSETB), the viewable radius from observer points (RADIUS1, RADIUS2), and the field of view (AZIMUTH1, AZIMUTH2).

Using observer points with this additional data, fields of view from each point are computed throughout the DEM landscape as either visible or not visible. Additionally, this data can be further manipulated to show cumulative viewsheds, or places in the landscape that are visible from multiple observer points. Cumulative viewsheds can be used to determine the intervisibility between places of importance, or to identify places in the landscape with wide views.

The concept of applying viewshed analysis to Late Woodland (900-1600 CE) settlements is not new, and there are several examples of its application in the Northeast. Archaeologist Eric E. Jones (2006) performed a viewshed analysis to explore settlement choices for the Onondaga Iroquois in New York between 1500 and 1700 CE. Jones's objective was to examine whether settlements were visible from one another. The results of his study revealed that recorded Onondaga archaeological sites display a degree of intervisibility, but the explanation for this phenomenon is complicated. Jones (2006:537) ultimately concluded that intervisibility of settlement sites could have served as a strategy for communication and defensibility, arguing "mutual defense would have been more effective because of decreased response time in the event of an attack on a neighboring village" (Jones 2006:537).

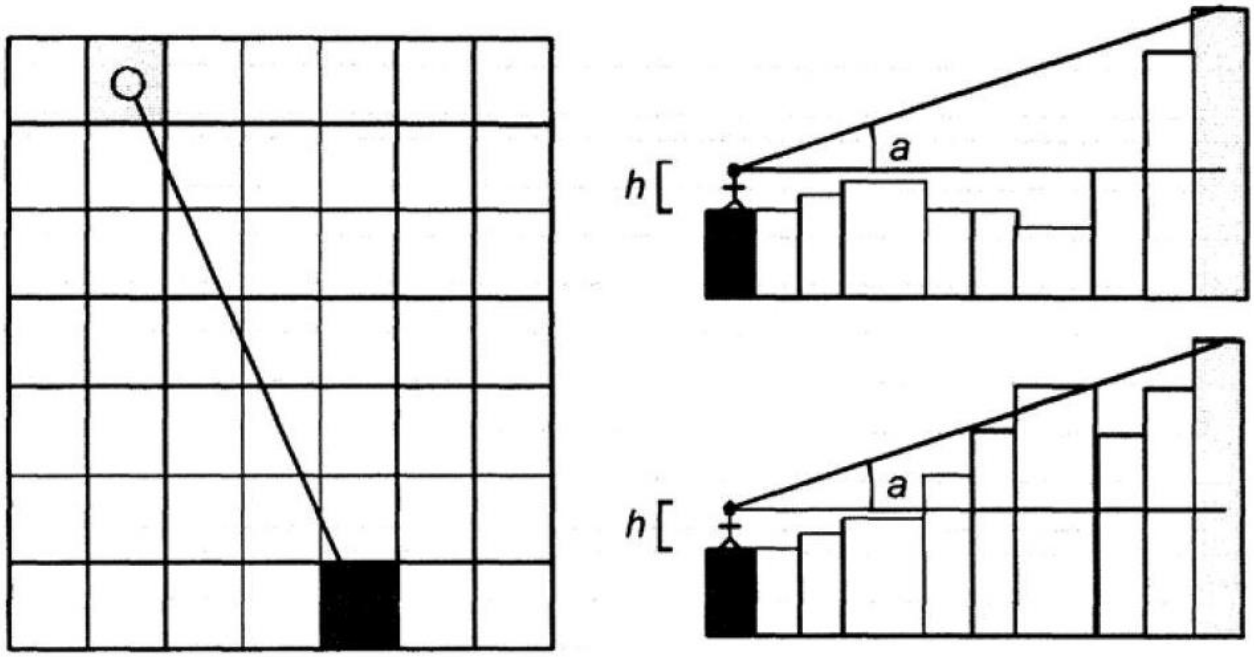

Figure 44. Calculating lines of sight using a DEM (Source: Wheatley and Gillings 2003:182).

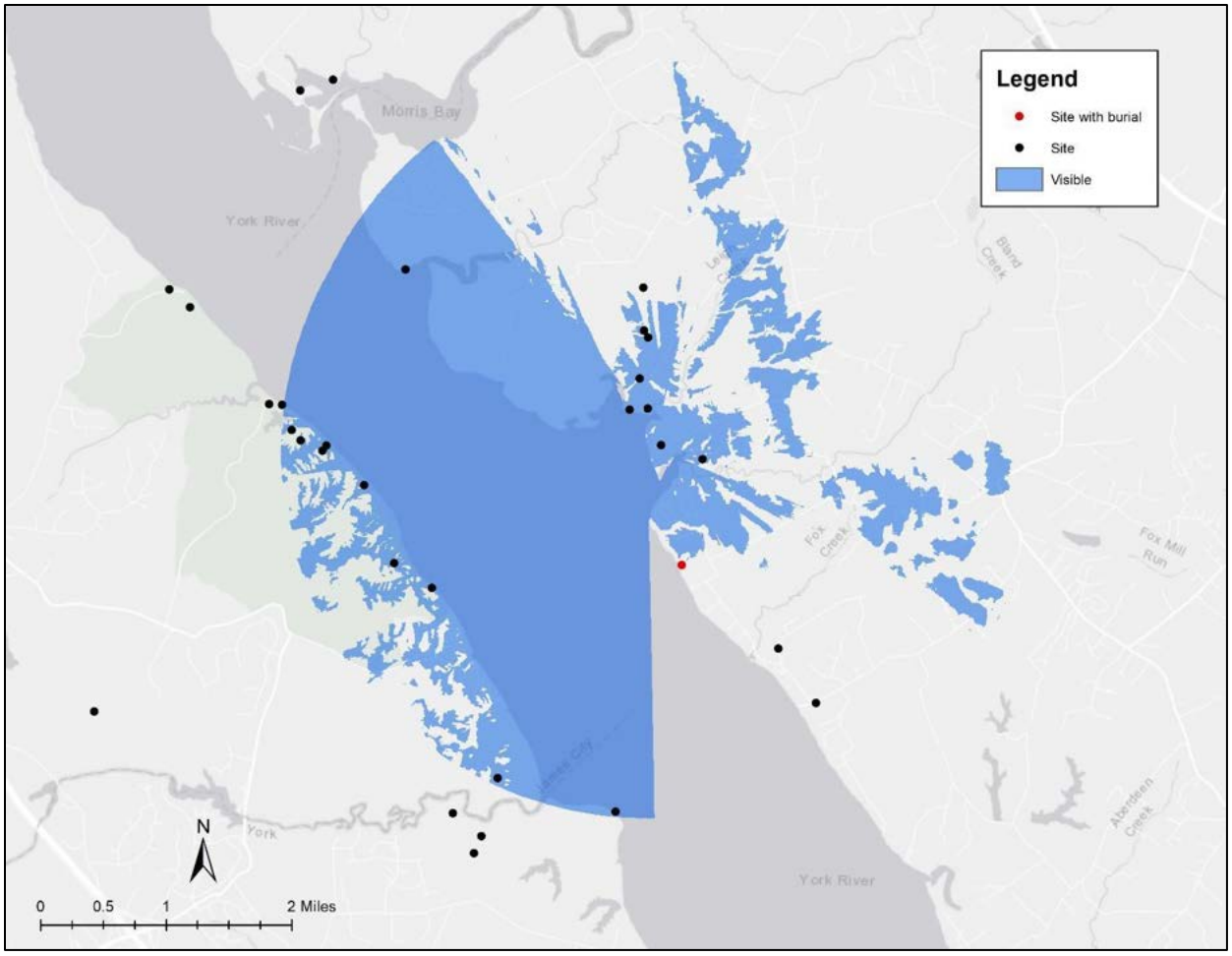

Figure 45. Werowocomoco viewshed model showing site intervisibility.

The Rappahannock ICL study revealed that ossuary or burial sites may have been important visual markers in the landscape (Strickland et al. 2016:100-105; King and Strickland 2018). Ossuary sites are of particular significance in terms of viewshed and visibility. Ossuaries are inherently spiritual places with important symbolic meaning in many Native cultures. Analysis of ossuaries in Maryland (Curry 1999; Maureen Kavanagh, personal communication, 2015) suggested that ossuaries are typically found facing open water and, in particular, open water facing west. Many ossuaries have also been found on areas of locally high elevations, particularly on sand ridges with high visibility. A number of ossuary sites have been found in soils with high gravel content.

Known ossuary and other burial sites were examined as part of this study to gauge their intervisibility in the landscape. Included in this examination was the Werowocomoco site to test whether the same holds true for monuments of political power in the landscape. The viewshed from Werowocomoco is shown in Figure 44 along with recorded Late Woodland/Contact sites (900-1700 CE). This viewshed model was calculated using a visibility radius of 4,700 meters, which represents the maximum distance to the horizon an observer looking out over flat ground can see. Werowocomoco is situated in Purtan Bay and has a wider viewshed upriver than downriver. Interestingly enough, of the 18 sites within the 4,700-meter radius, 12 are visible from Werowocomoco. As was discussed in Chapter V, monumental architecture at Werowocomoco may have been used to create a visual experience to people visiting the settlement. The

intervisibility between Werowocomoco and sites across the river suggests that this on-site visual experience may have also been the case over long distances.

Two ossuary sites are located near Kiskiack (44YO0150 and 44YO1031). A viewshed of these two sites was computed and contain a number of possible contemporaneous sites (Figure 45). Of the 58 sites within a 4,700-meter radius of the two ossuaries, 38 (66.7%) are visible. Perhaps most importantly, the Kiskiack site itself is visible from these ossuaries. Likewise, from Kiskiack (itself an important settlement) a number of additional sites are also visible (Figure 46). The intervisibility of these important types of sites as calculated by GIS reinforces the idea that they probably served as important visual landmarks in the landscape.

Given the overall lack of survey along much of the York, Pamunkey, and Mattaponi rivers and in the interest of broadening the use of viewshed analysis, identifying places with wide views of the river could be used to inform where settlements may have been located. Settlements located along portions of the river with wide views may be advantageous for the ability to see approaching threats, for communication, or for symbolic or spiritual purposes.

To identify areas with expansive views of the river, a DEM of the study area was clipped to only include areas extending 500 meters from dry shoreline. This was done to restrict the data being analyzed

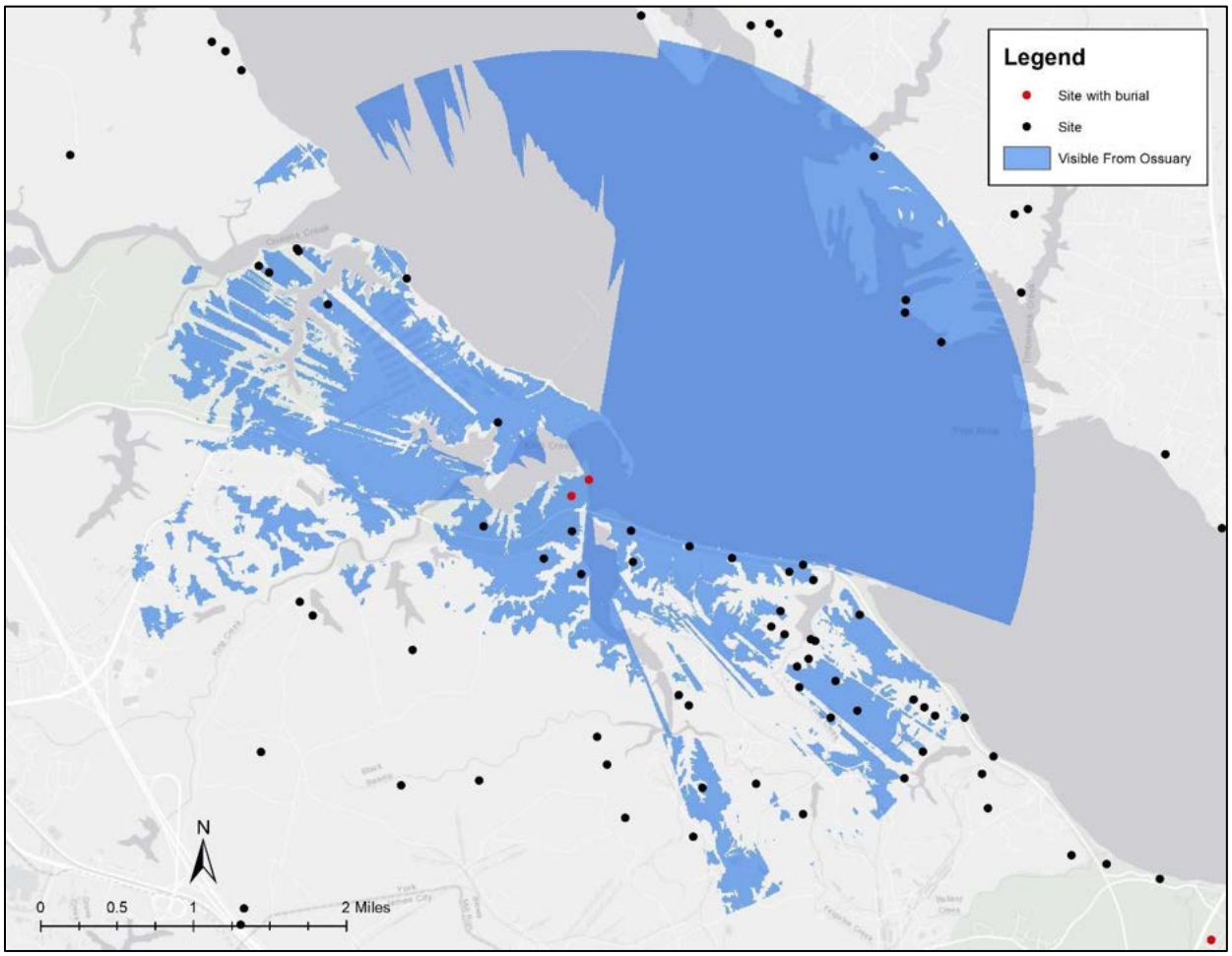

Figure 46. Kiskiack ossuary viewshed model showing site intervisibility.

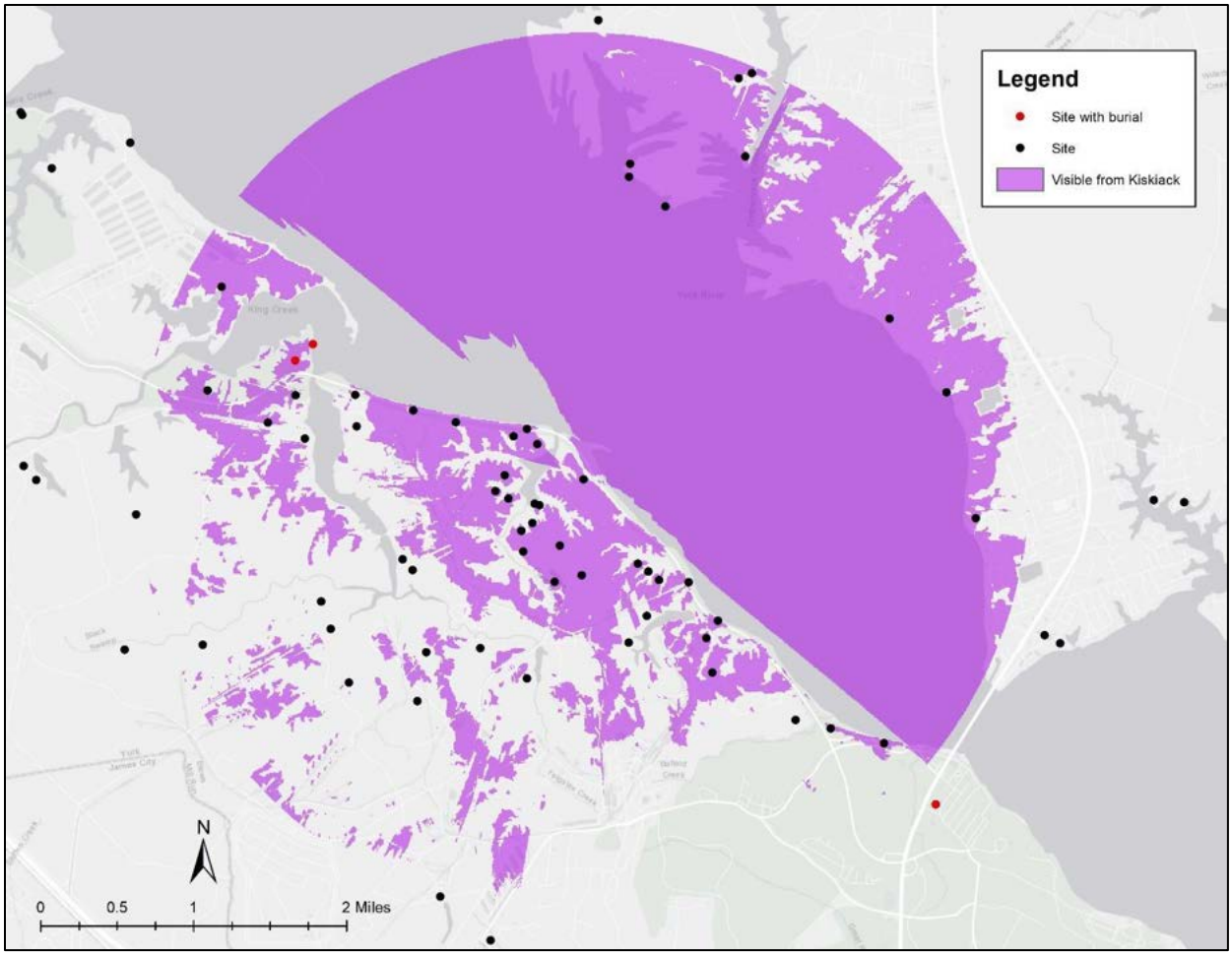

Figure 47. Kiskiack viewshed model, showing site intervisibility.

to just the river and to emulate seeing over low-lying marshes. Sample points to calculate the cumulative viewshed were placed along a path marking the centerlines of each river valley (excluding marshes) at even intervals of 2 kilometers (roughly 1.25 miles). These sample points would serve as observer points in the viewshed analysis. The 2-kilometer interval was chosen as a means of making the data simpler to compute within GIS, while still maintaining multiple observer points to test throughout different parts of the landscape. The sample points were given a visibility radius of 4,700 meters, the same as the archaeological site data points previously mentioned.

The resulting cumulative viewshed raster (Figure 47) was used not for determining intervisibility among the sample points, but to identify areas in the landscape where the greatest number of sample points were visible in the landscape. In short, this would identify the areas with the widest views of the river and shorelines. In conjunction with models based on ecological attributes, this may help identify areas for future archaeological survey in the York drainage. Using this methodology, a number of places have been identified that could be considered particularly advantageous for survey. Some of the most notable places (from west to east) are listed below:

- The area around Kiskiack and the Yorktown Naval Weapons Station
- The mouth of Carter Creek (north bank), including Blundering Point

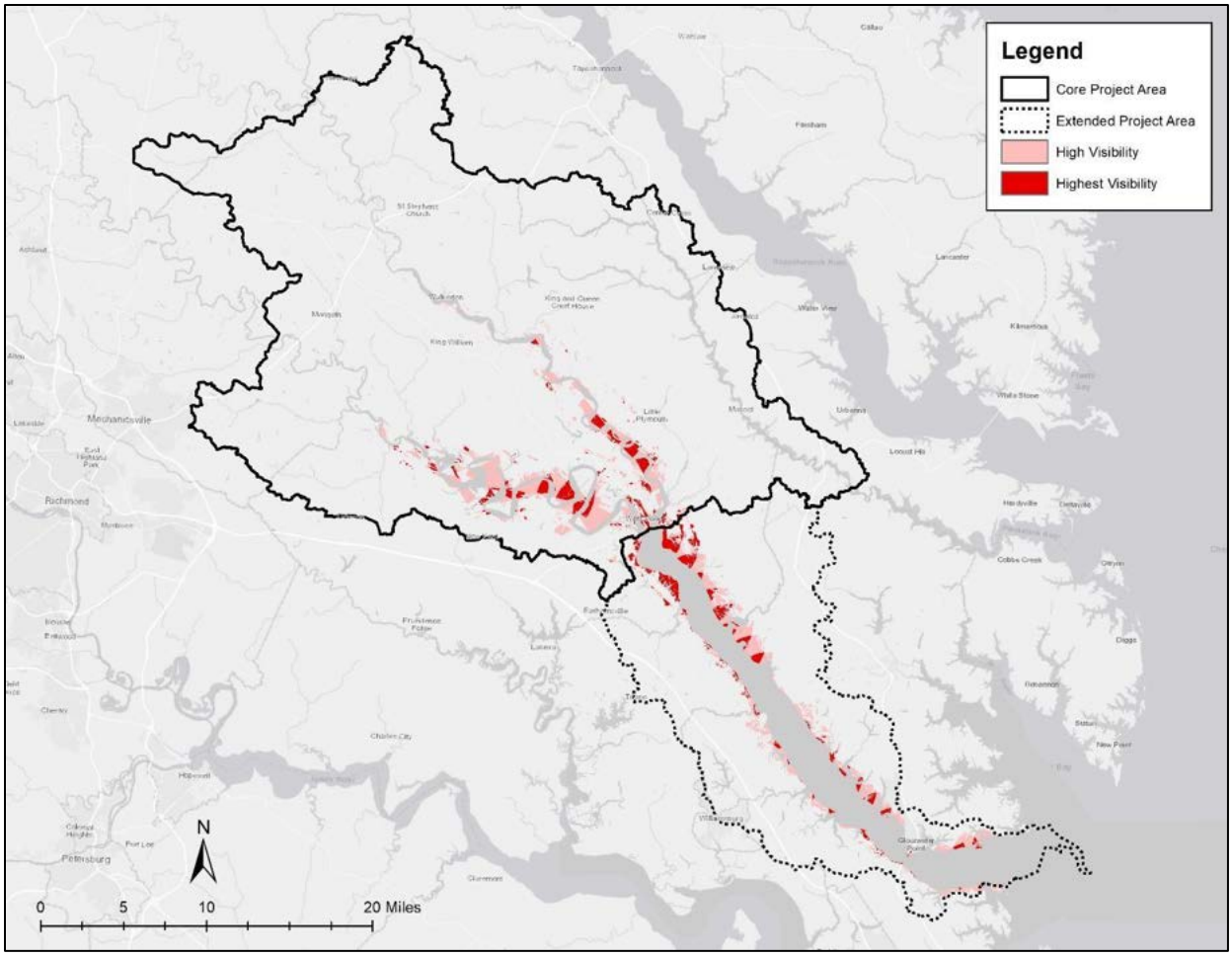

Figure 48. Highly visible areas from viewshed analysis.

- Clay Bank
- Camp Peary (southeast of Carter Creek south bank)
- Purtan Island
- West Point
- Plum Point
- Romancoke (conjectured location of Uttamussak)
- Sweet Hall
- Pamunkey Indian Reservation
- Land near Mattaponi Indian Reservation

Of particular note is the high visibility area around the place historically known as Romancoke, just west of West Point and near present-day Romancoke Road. This is the conjectured location of the important settlement and religious center known as Uttamussak. A road marker for this place is located just southwest of Romancoke Road. It has long been known to the Pamunkey that this was the location of this sacred site. Uttamussak, a religious place where only weroances and priests were allowed, is described by Smith as being on a red sandy hill in the woods. This description matches the high visibility area of Romancoke well, which is situated atop elevated terraces opposite Hill Marsh, with the exposed and eroding north bank of the Pamunkey River revealing layers of red sandy clay visible to anyone passing by in the

Figure 49. View of Uttamussak from Pamunkey River (Source: Chesapeake Conservancy).

water (Figure 48). The railroad running from Richmond to West Point goes through this area of high visibility.

CHAPTER VII
MAPPING THE ICL

CHAPTER HIGHLIGHTS

- Soil productivity and drainage, wetland proximity, slope, and elevation were the principal environmental variables shaping Native decision-making for settlement between 900 and 1600 CE.
- Documentary evidence affirms and describes the specific food resources from these varied environments, including corn, fish, shellfish, deer, and other foods, and provides evidence about seasonality and scheduling.
- Boundaries for a single Indigenous Cultural Landscape are proposed extending from the upper reaches of the Pamunkey and Mattaponi rivers to the mouth of the York River. The proposed ICL includes both historic (900-1600 CE) and contemporary Native landscapes.
- The proposed ICL consists primarily of rural land uses. Approximately 16.1% of this land is protected through public ownership (including Federal military installations) and conservation easements.

This chapter presents a summary of the analysis done for determining the final boundaries of the ICL for each tribe. It begins with a discussion of the analytical results of the previous chapter and the compilation of spatial information from archaeological and documentary evidence. This analysis reveals the important ecological knowledge of the historic peoples of the York, Pamunkey, and Mattaponi as they located settlements, including Werowocomoco, to take advantage of natural resources and then fashioned a landscape around those settlements rich in cultural meaning. Other preliminary findings suggest that viewsheds and the role of the visual experience played an important role in this historic landscape.

Pamunkey and Upper Mattaponi tribal members provided unique perspectives on what they considered places of significance. During the mapping exercises, it became apparent that very localized mapping was to become the primary focus for both groups. For the Pamunkey, areas within their reservation and the immediately surrounding environs were most important while, for the Upper Mattaponi, it was the area historically known as Adamstown and Pampatike. The geographical range stands in contrast with the ICL studies completed for the Nanticoke, Piscataway, and Rappahannock, who were interested in a much broader geographical range. Though the Mattaponi ultimately did not participate in this part of the project, introductory meetings also emphasized areas of importance centered around their current reservation and places that once made up part of their reservation in the past.

A challenge for this project was the representation of time, especially given the dynamic nature of all landscapes. Indigenous uses of and attitudes toward the landscape have changed from the Late Woodland period (900-1600 CE) through the present. Culturally meaningful places and landscapes have also shifted over time. The challenge of depicting temporal or chronological variability is a common criticism of mapping and of GIS in particular. There is also the concern that landscape analysis places undue emphasis on coastal settlements as mapped by Captain John Smith. As important as towns along the river were, they do not account for the richness of Native culture as seen through the documentary record, archaeological evidence, and oral traditions. This emphasis on the Smith map could shift attention towards the stereotypical notion that Virginia's Native people existed only into the seventeenth and early eighteenth centuries. Reconciling the large amounts of available information while also working to address these concerns about representation became a major focus for determining what should be included in the ICL. A greater

emphasis was placed on relatively recent tribal history for both the Pamunkey and the Upper Mattaponi, including events taking place in the nineteenth and twentieth centuries.

Using ethnographic and stakeholder information along with extensive online datasets mined for this effort, the historic and contemporary ICL is presented. Recognizing the entire watershed boundary as part of a broader historic ICL, this exercise focused on identifying meaningful landscapes within those boundaries. These are places to which the contemporary Pamunkey and Upper Mattaponi and their ancestors have been tied for centuries. They are nonetheless dynamic landscapes even as they tell a story that connects past events and histories to the present.

Finally, a predictive model of ICLs previously developed for the Chesapeake as a whole is examined to identify landscapes that were not physically visited during this effort. This model provides further insights into the ecological differences between the north and south banks of the York River when compared with the bountiful landscapes along the Pamunkey and Mattaponi rivers.

A Settlement Model for the York/Pamunkey/Mattaponi Watershed

As previously noted, a number of variables have commonly and repeatedly informed indigenous decision-making in the Chesapeake and beyond. In Chapter VI, a statistical correlation was demonstrated between archaeological site presence and agricultural or soil productivity, including for the Project Area. But what of the characteristics of the individual soil types?

As noted in Chapter VI, 233 Late Woodland/Contact period (900-1700 CE) archaeological sites are found within the Project Area, and these sites are located on 89 different soil types. A total of 339 soil types from eight counties are found within the Project Area (Caroline, Gloucester, Hanover, James City, King and Queen, King William, New Kent, and York), suggesting that 250 soil types were not preferred for settlements (or at least those settlements that would leave an archaeological signature). The distribution could also reflect the lack of extensive survey in this portion of the river drainage. Soil types within the Project Area are defined by individual county, with James City and York being the only ones mapped together, so soils of the same/similar type may have completely different designations just over the county line. Unfortunately, soil data is not available on Navy and Army properties along the York River, so those sites could not be included in any soil analysis. For the purposes of this examination, soils were analyzed by their unique identification code within the SSURGO dataset and later analyzed for their county-level soil survey designations and names.

A chi-square test – a non-parametric statistical test for nominal data – was used to identify relationships between soil classifications and archaeological site location. Like the KS-tests covered in Chapter VI, chi-square tests aim to compare the differences between the number of observations versus what would be expected from a random sample. Excluded from these calculations is the designation for water, which is included within each soil survey dataset but not useful for this study. The difference between a KS-test and a chi-square test has to do with the nature of the data. Chi-square tests are used to test associations for variables that are "either/or," that is, that are not ranked. The soil is either one type or another (or missing) but not in-between.

The results of the test revealed that there is a statistically significant correlation between the two datasets (archaeological sites and soil type) at a significance level of 0.001 (99.9% confidence level). This indicates that Late Woodland/Contact period sites are indeed distributed according to soil type. This test, however, does not explain the relationship between these two variables, or why they are correlated.

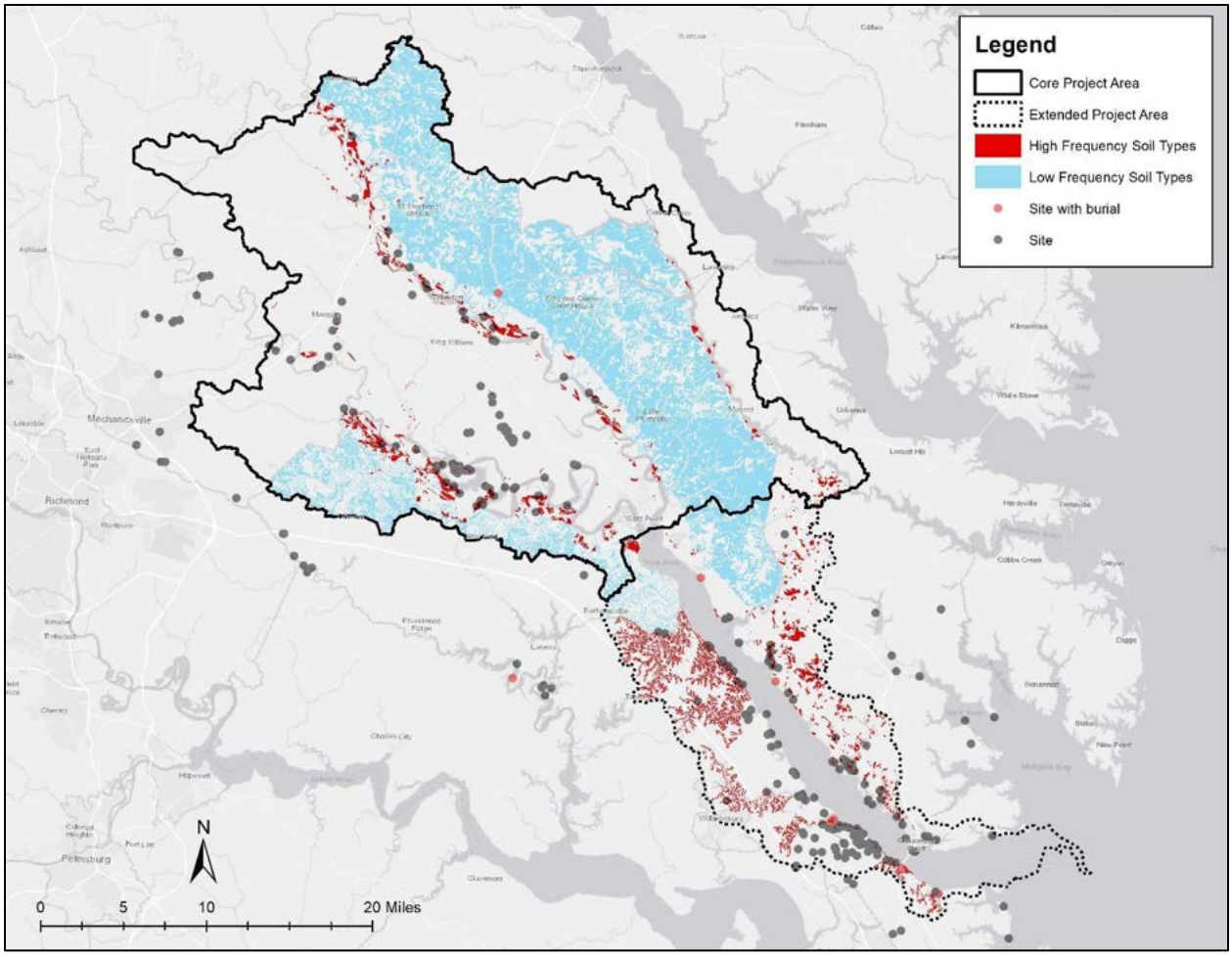

Figure 50. Soils with abnormally high and abnormally low site frequencies.

To discover what that relationship is, the difference of the percent of sites observed at each soil type and the percent of land for each soil type were tabulated. Those soil types with an absolute value greater than two times the standard deviation were noted and separated as soils associations with Abnormally High and Abnormally Low frequencies (think of this distribution as the best and worst soils for expecting sites) (Figure 49; Tables 15 and 16). This was done to identify the deviation from what would be expected for a random distribution of sites. The soil properties for each soil type were then examined to try and locate patterns (if any). Soil properties included how well drained the soil types are, their texture/compositions, estimated yield of corn (non-irrigated) in bushels per acre, and Land Capability Class (non-irrigated). Land Capability Class is a broad, simple, designation given to soil types according to their agricultural potential. They range from I (best) to VII (worst), with classes I-III being considered soils conducive to agricultural activity.

The types of drainage for the soils with abnormally high frequencies of sites range from somewhat excessively drained to moderately well drained. The level of drainage in soils with abnormally low frequencies of sites range from moderately well to well drained. There appears to be at least a slight pattern with sites being located on well drained soils, some excessively so.

Soil Type	County	Soil Name	Yield	Description	Drainage Capability	Capability Class
29B	Gloucester	Suffolk	110	Fine sandy loam	Well drained	II
3B	Gloucester	Craven	79	Silt loam	Moderately well drained	II
15F	James City/ York	Emporia	160	Marine deposits	Well drained	VII
26B	James City/ York	Pamunkey	No Data	Alluvium	Well drained	II
18B	King and Queen	Tarboro	65	Sand	Somewhat excessively drained	III
1A	King William	Altavista	160	Loamy sand	Well drained	II
29B	King William	Tarboro	65	Sand	Somewhat excessively drained	III
30B	New Kent	Pamunkey	80	Alluvium	Well drained	II
32A	New Kent	Seabrook	65	Loamy sand	Moderately well drained	III
37A	New Kent	Tarboro	160	Loamy sand	Somewhat excessively drained	III

Table 15. Soils with abnormally high occurrences of archaeological sites.

Soil Type	County	Soil Name	Yield	Description	Drainage Capability	Capability Class
5D	King and Queen	Emporia-Slagle-Rumford	91	Loamy marine deposits	Well to moderately well drained	IV
5E	King and Queen	Emporia-Slagle-Rumford	No Data	Loamy marine deposits	Well to moderately well drained	VII
10B	King William	Emporia	120	Fine sandy loam	Well drained	II (erodible)
26D	New Kent	Nevark-Remlik	68	Marine deposits	Moderately well drained	IV
26E	New Kent	Nevark-Remlik	No Data	Marine deposits	Moderately well drained	V

Table 16. Soils with abnormally low occurrences of archaeological sites.

There are several noticeable differences between soil texture. Soils with high frequencies of sites consist of mostly sandy soils such as sand, loamy sands, and sandy loams. A couple soils were composed of alluvium, which are floodplain deposits often found in river deltas and valleys. Soils with low frequencies of sites consist primarily of marine deposits, with one exception being a fine sandy loam (type 10B) found in King William County. It is notable that this type is also considered highly erodible.

It comes as no surprise that soils with abnormally high site frequency are rated as demonstrably better suited for agriculture than abnormally low site frequency. There are several soils within both the abnormally high and the abnormally low categories that have not been rated for potential agricultural yield estimates but they are all rated by Land Capability Class. Abnormally high site frequency soils consist of those ranging from classes I to III, with one exception of a marine deposit soil type (type 15F) found in James City and York counties designated as Class VII. That said, soil type 15F is one of the most productive soils in the entire river valley. Its low Capability Class rating can be attributed to the fact that it is susceptible

to flooding though it is well drained. Soils with low site frequencies have Capability Class ratings ranging from II (but erodible) to VII (not conducive to farming).

Soil conditions appear to be just one of several drivers for determining settlement location. A combination of factors, including wetland proximity, slope, and elevation in conjunction with agriculturally productive soils, are among the main environmental forces shaping settlement location in the York, Pamunkey, and Mattaponi river valleys. This assessment serves as a generalization among all site types and not an assessment of sites with specialized uses, such as winter hunting and base camps or religious sites. Hunting and base camps have been found to exist further from waterways (though still relatively close) without any statistical correlation between their location and agricultural productivity (Strickland 2012). This finding is understandable given the types of subsistence activities performed at those sites.

In addition to the statistical analysis of archaeological site spatial data, documentary records provide details into the year-round settlement of Native population during the colonial period. In 1608, when Smith explored the Chesapeake and its tributaries in voyages lasting from early June through early September, he and his fellow Englishmen often traded items for food. In his publication, *A True Relation of Virginia*, Smith mentions food items a total of 87 times. A summary of all food items mentioned can be found in Table 17. Among the items mentioned, corn-related foods appear to have been the most important, forming 68% of all food references by Smith. The largest protein source came from waterfowl and turkey (15%). This is notable, considering fewer bird bones are found in archaeological deposits.[43]

Category	Food Type	No. of Ref.	Percent
Corn (67.82%)	Corn	39	44.83
	Bread	20	22.99
Fowl/Poultry (14.94%)	UID Fowl	6	6.90
	Turkey	3	3.45
	Duck	1	1.15
	Swan	1	1.15
	Crane	1	1.15
	Goose	1	1.15
Fish/Shellfish (10.34%)	Fish	7	8.05
	Oysters	1	1.15
	Mussels	1	1.15
Other Meat (4.60%)	Deer	3	3.45
	UID Meat	1	1.15
Other Plants (2.30%)	Berries	2	2.30%

Table 17. Mentions of food in Smith's *A True Relation*.

Smith's record provides a general view into the diet of the groups the English encountered throughout the summer of 1608. Corn, of course, requires suitable soils for its cultivation. Meat resources (including duck, swan, crane, geese, fish, oysters, and mussels) come primarily from wetland and riverine environments. Smith's notes imply a settlement strategy during these months that required close proximity to both wetland resources and agriculturally productive soils.

E. Randolph Turner (1976) examined the availability of key wild food resources throughout each season and within three possible zones of habitation (Inland, Transition, and Coast) within the Virginia Coastal Plain. A summary of his findings is presented in Table 18. Turner's findings reveal the intra-regional and seasonal availability of different kinds of food resources. He did not account for agricultural resources such as corn.

Mary Kate Mansius (2013) used archaeological data and primary and secondary historical data to develop a model of Piscataway settlement patterns in the lower Potomac valley on the river's north shore. Mansius (2013) noted food resources and the type of occupation taking place during each month (Table 19). These data imply corn was an ever-present part of the subsistence strategy, serving as a major plant

[43] Preservation issues may be at play here.

Season	Inland	Transition	Coast
Spring	Freshwater fish/shellfish	Anadromous fish	Marine fish/shellfish
Summer	Freshwater fish/shellfish, fruits, grain	Fruits, grain	Marine fish/shellfish, fruits, vegetables
Fall	Deer, turkey, freshwater fish/shellfish, nuts, fruits, starchy grain substitutes	Migratory fowl, turkey, nuts, fruits, starchy grain substitutes	Marine shellfish, fruits, starchy grain substitutes
Winter	Deer, turkey, freshwater fish, nuts, starchy grain substitutes	Migratory fowl, turkey, nuts, starchy grain substitutes	Bear, starchy grain substitutes

Table 18. Key wild food resources in three zones of habitation (Turner 1976).

Month	Plants	Animals	Settlement Type
Jan	Dried food	Deer, oysters	Hunting camps; Hamlets
Feb	Dried food	Deer, oysters	Hunting camps; Hamlets
Mar	Fruits, berries	Fish, oysters	Fishing stations; Long term sites
Apr	Fruits, berries	Fish, oysters	Fishing stations; Long term sites
May	Fruits, berries, greens	Fish, oysters, available wildlife	Long term sites; Procurement camps; Fishing stations
Jun	Fruits, berries, greens	Fish, oysters, available wildlife	Long term sites; Procurement camps
Jul	Fruits, berries, greens	Fish, oysters, available wildlife	Long term sites; Procurement camps
Aug	Corn	Oysters, available wildlife	Long term sites
Sep	Corn	Oysters, available wildlife	Long term sites
Oct	Corn, nuts	Oysters, available wildlife	Long term sites
Nov	Dried food	Deer, oysters	Long term sites; Hunting camps
Dec	Dried food	Deer, oysters	Hunting camps; Hamlets

Table 19. Piscataway seasonal dietary schedule (Mansius 2013).

food source beginning in August (the start of the harvest season) and lasting until stored reserves were depleted sometime in February. The cultivation of corn would begin in late April and May and would be grown along with beans and squash. Throughout the year, oysters would have been consumed, though in greater quantities during the late summer and early fall months (Mansius 2013).

The National Park Service's base criteria for defining ICLs (listed in Chapter II) addresses the general settlement patterns of indigenous groups, primarily those present at the time Captain John Smith made his voyages in 1608. By researching the settlement patterns of Late Woodland/Contact period (900-1700 CE) sites on a micro-regional basis, the ICL criteria can be adjusted according to the findings therein. Given the importance of corn agriculture, good agricultural soils are defined as agricultural soils ideal for corn production. This research informs which criteria may be considered having the greatest impact with regards to settlement location.

The Historic and Contemporary ICL

All relevant data layers, including the archaeological, documentary, ethnographic, and land use information compiled as part of this project, were synthesized to produce a single composite map (Figure 50; see Figures 22, 24, and 25 for more detail about contemporary uses)). This map was used in the

determination of the ICL boundary within the Project Area. While the entirety of the Project Area can be considered a part of the ICL, this composite map highlights particular areas representing use by the Pamunkey, Upper Mattaponi, and Mattaponi, historically and in the present.

The proposed ICL boundary shown in Figure 51 includes all areas of interest identified by the tribal consultants, recorded archaeological resources with Late Woodland and Contact period contexts, places revealed during historical background research, wide viewshed areas, concentrations of highly productive soil for corn, important wetland/marsh areas, and areas identified by the ICL sensitivity model as harboring a co-occurrence of several important environmental variables. These areas are considered "hot spots" for interpretation and preservation. Not surprisingly, nearly all of the Project Area is included within the ICL boundary. A non-contiguous portion of the ICL boundary includes portions of Dragon Swamp. This portion was defined using high sensitivity areas and historical documentation stating that the swamp was a safe haven for multiple Native groups during Bacon's Rebellion.

The ICL boundary was examined in comparison with current land use data as well as with protected land areas (Figures 52 and 53). The reclassified land use data depicts the areas with undeveloped (forested) and developed (labeled as current activity) land; developed land includes residential, agricultural, or commercial uses. Much of the ICL consists of agricultural land, particularly along the shores of the river

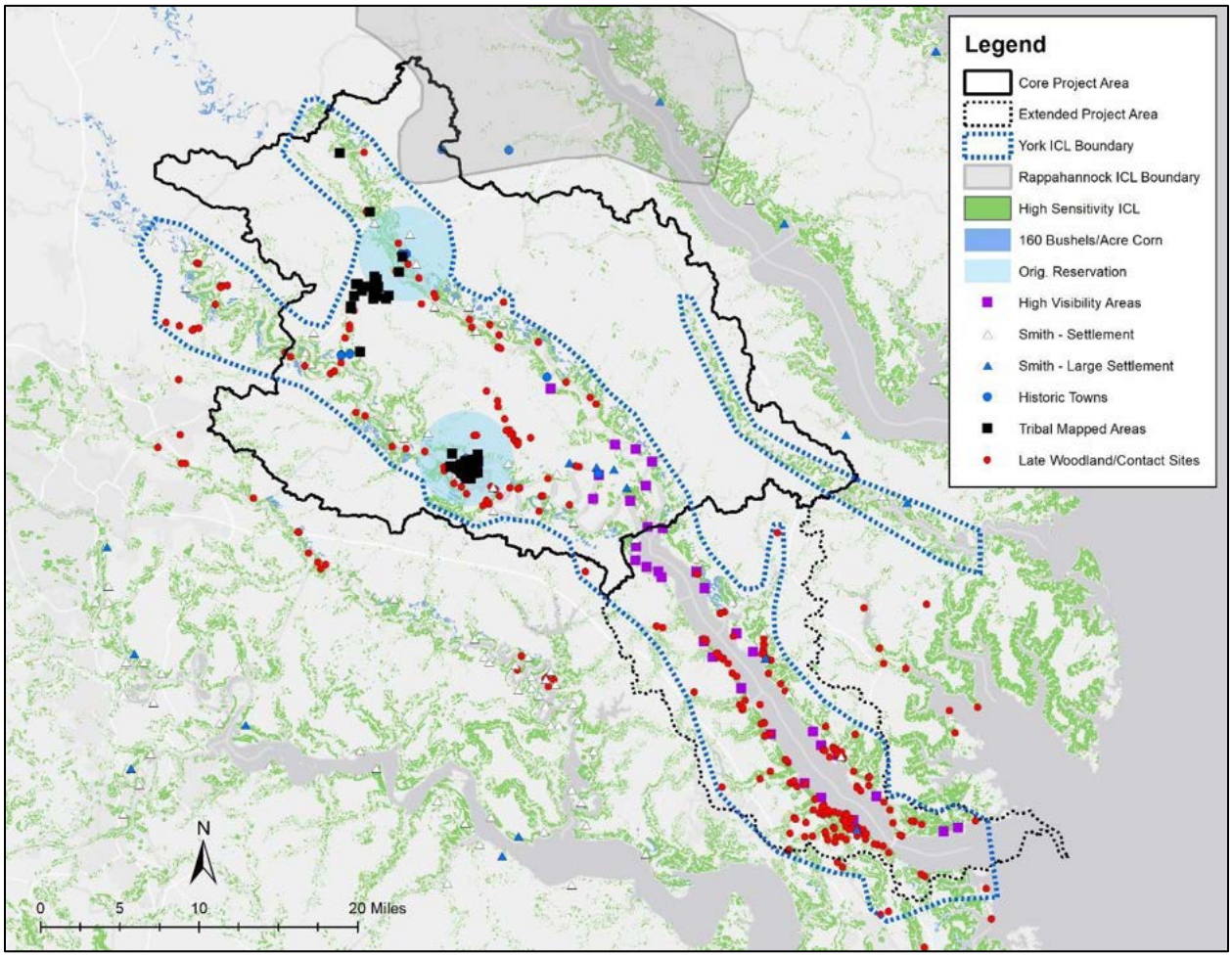

Figure 51. Composite map of data sets showing proposed ICL boundary.

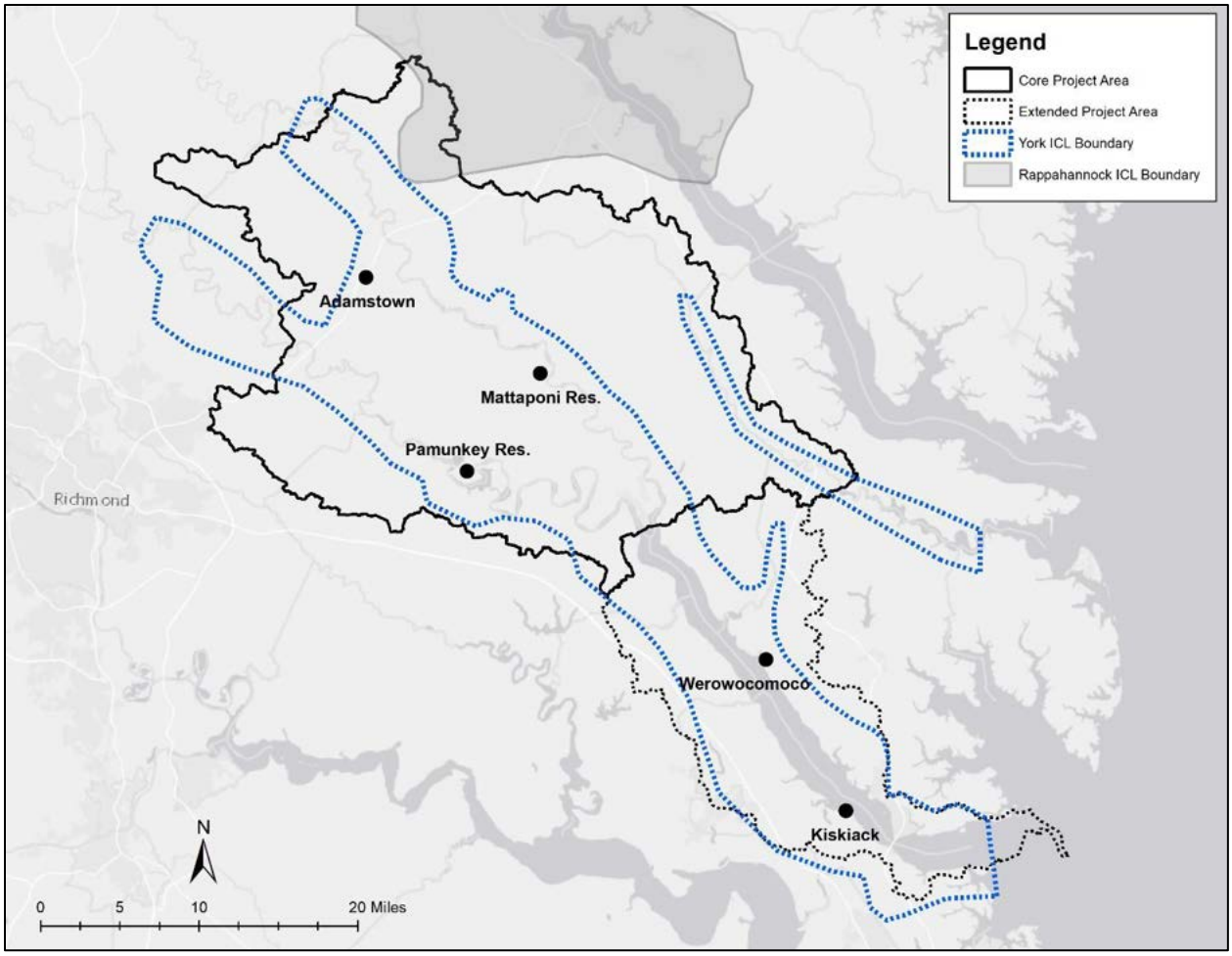

Figure 52. The proposed ICL boundary and the Rappahannock ICL boundary.

Generally, nearly the entire Project Area, save for the towns of Walkerton, West Point, Yorktown, and Gloucester Point, is rural and undeveloped apart from intense agricultural activity and, in some locations, military use.

Given the rural nature of the Project Area and the amounts of county-, state-, and Federally-owned land within it, along with conservation easements on private property, it is not surprising that approximately 16.1% of the ICL area is considered to be at least somewhat protected. Federally-owned land managed by the US Army at Camp Peary and the US Navy at Yorktown Naval Weapons Station make up the bulk of protected land within the ICL followed by State-owned land, including the York River State Park and the Ware Creek Wildlife Management area. Though considered protected land, the Federally-owned military land is developed. It is considered protected because this development is bound by Sections 106 and 110 requirements of the National Historic Preservation Act as amended. Protected lands are located primarily along the south bank of the York, though there are notable areas, including the recently acquired Werowocomoco site owned by NPS and the State-owned Timberneck property along the north bank. A notable gap in land conservation is located on the north bank of the Mattaponi River between West Point and Aylett on the King and Queen County side. Much of this land remains undeveloped and there are no large-scale development plans in the area at this time, although this could change.

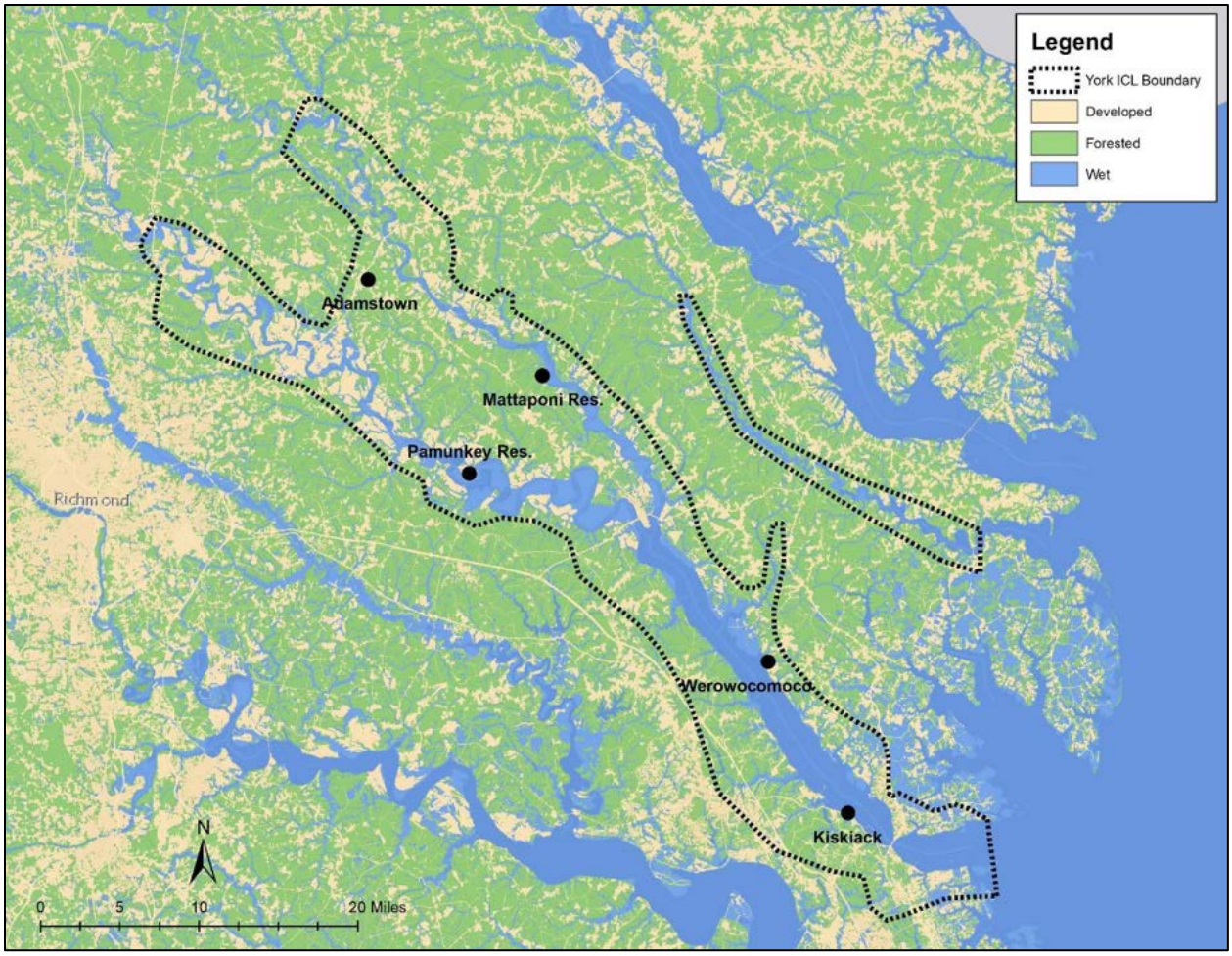

Figure 53. The proposed ICL boundary and current land uses.

Finally, it should be noted that much of the data acquired from tribal members and from the Virginia Department of Historic Resources (DHR) site data contains sensitive information. As such, locations of specific sites and places are left intentionally vague. As part of the data licensing agreement with DHR, all archaeological site location is to be protected. To safeguard against any destruction of sites depicted in this report, archaeological sites are denoted by selected symbols and depicted only on large scale maps. Sites shown are also not depicted according to typologies such as towns or burial sites, which could easily become targets.

Summary

Using information provided by tribes and non-tribal stakeholders, environmental and land use datasets available online, and clues found in primary source documents, the proposed York/Pamunkey/Mattaponi ICL was identified and mapped. The ICL boundaries represent areas of known historical and contemporary use. No doubt these boundaries will change as more information becomes available. The greater ICL outside of the Project Area includes urban centers associated with the diaspora of indigenous people that occurred in the nineteenth and twentieth centuries, but are not included in the present research (but see Chapter VIII). The current representation indicates the areas in which conservation

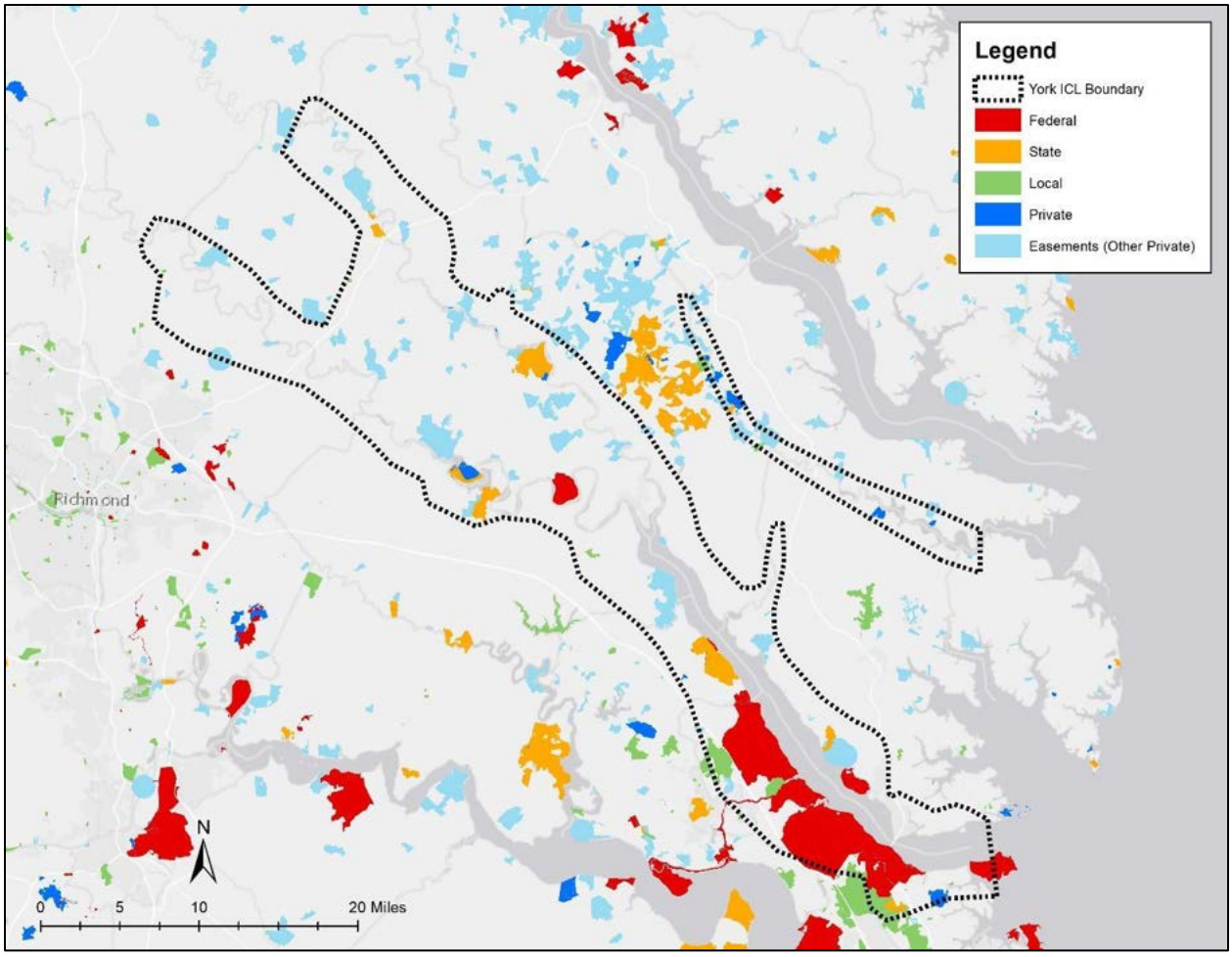

Figure 54. ICL boundary with protected lands.

and interpretation efforts related to the development of the Captain John Smith Chesapeake National Historic Trail may be directed.

While the focus of the Chesapeake Trail is in large part the early seventeenth-century ICL, the presence of a vibrant contemporary indigenous community along the York, Pamunkey, and Mattaponi rivers provides an exceptional opportunity to draw visitors' attention to the persistence of the Pamunkey, Upper Mattaponi, and Mattaponi tribes and the reality that Native peoples did not just disappear or even move very far away.

CHAPTER VIII
CONCLUSION AND RECOMMENDATIONS

The York/Pamunkey/Mattaponi Indigenous Cultural Landscape project constituted an effort to bring together contemporary tribal understandings of the landscape with large quantities of data found in a variety of forms. This information was synthesized for the purpose of identifying places and landscapes meaningful to the historic and contemporary Native people of this region of the Chesapeake. This model will ideally serve as a starting point for discussion about how this landscape can be used and interpreted for educational, preservation, conservation, and economic development purposes, beginning with the Captain John Smith Chesapeake National Historic Trail. This chapter organizes the major findings of this project and presents recommendations for future work.

Following the recommendation of Sullivan, Chambers, and Barbery (2013) and as applied by Strickland, Busby, and King (2015) and again by Strickland et al. (2016), the initial Project Area was delineated according to watershed boundaries. These boundaries are considered ecological management units by the Environmental Protection Agency (1997) as well as watershed scientists. In addition, indigenous use of rivers and other waterways, from sources of food to routes of travel, fostered a deep knowledge and understanding of specific watersheds. The fact that many of the points, places, creeks, streams, and other waterways still bear the names given to them by the Native inhabitants suggests that, while watersheds may be an arbitrary boundary for undertaking ICL projects, watersheds did have an economic and social reality for the indigenous groups of the York/Pamunkey/Mattaponi. Even so, with a combined watershed of 1,017 square miles, the Project Area is large. This makes the York/Pamunkey/Mattaponi ICL project the largest project in scope to date completed for the National Park Service – nearly twice the coverage of the Rappahannock ICL. Given these constraints as well as the National Park Service's goal to define "hot spots" of past and present indigenous use of the landscape, the proposed ICL boundary represents those areas of greatest interest to the Pamunkey, Upper Mattaponi, and Mattaponi.

The York/Pamunkey/Mattaponi ICL

This analysis of the York, Pamunkey, and Mattaponi watersheds has revealed the extensive and sophisticated level of ecological knowledge understood by the historic and contemporary Pamunkey, Upper Mattaponi, and Mattaponi. Soil quality, for example, was only one of several factors influencing settlement choice from the thirteenth through the seventeenth centuries. Wetlands and marshes were a critical source of food and access to waterways was a must. Viewshed also played an important role for both practical and religious reasons, with the construction of ossuaries and other monumental architecture, such as that found at Werowocomoco of daily importance to Native people.

Archaeological and documentary evidence suggests the persistent presence of Native people throughout the three river valleys beginning thousands of years ago. The continued existence of reservations established in the seventeenth century for the Pamunkey and Mattaponi, though diminished from their original size, is a testament to their centuries-old relationship with colonial, state, and federal governments. These documents also reveal how these groups interacted with one another and the different mechanisms they used to cope with encroaching English occupiers and changing economic realities. Some documents note the locations of paths between Indian towns, providing links to a much broader landscape, including to nearby watersheds. Archaeological and documentary evidence suggest that, well after European invasion and occupation, these groups maintained familiar practices, continuing to use Native-made pots, consume Native foods, and use Native methods for hunting and trapping. In some cases, Native people used English material culture and English law to their advantage, taking up grievances against individuals within the

colonial legal system; in other cases, the dispossession of their lands and the reduction of the reservations was accomplished through legal documents that had little meaning to the land's first occupants.

Places of significance to the contemporary Pamunkey include the Pamunkey Reservation and nearby plantations and market places, including Lester Manor, White House, and Old Town Farm. Places of importance within the reservation include cemeteries/burials, homes, the church, trading posts, schools, hunting/trapping grounds, and fish hatcheries. The Pamunkey have been on the reservation for centuries and during this time maintained a self-sufficient forward-thinking community through changing and turbulent times. The Pamunkey have a widespread diaspora taking them to urban centers, including Richmond, where many of their goods are sold, and Philadelphia, where a community formed around a neighborhood called the "Indian Village." The railroad that runs through their reservation was their connection to these places and is considered an important part of their story.

Places of significance to the contemporary Upper Mattaponi include places and structures within the rural village known today as Adamstown, the community of Pampatike, the Mattaponi River (particularly in the vicinity of the Mattaponi/Chickahominy reservation where baptisms were held into the twentieth century), and hunting properties and sites along the Mattaponi River. The Upper Mattaponi may represent a mix of Chickahominy and Mattaponi, whose ancestral homelands were along the Chickahominy and Mattaponi rivers, respectively. Post-Contact they may have moved as far afield as Piscataway Creek in the Rappahannock watershed. The Upper Mattaponi have made their home near Adamstown, in the vicinity of Central Garage in King William County and within the bounds of the seventeenth-century reservation. Many of the Upper Mattaponi still reside here and have built for themselves a tight-knit community centered around their tribal center, church, and tribal grounds.

Recommendations

As with previous ICL studies, the York/Pamunkey/Mattaponi ICL project has been presented as an opportunity to serve the Native community by documenting its members' relationship with the watershed and identifying areas that the tribes might target for land conservation, the preservation of natural and cultural resources, education, tourism, and economic development. The York River valley is a unique landscape that has yielded important information about the dynamics of political power before the arrival of Europeans. A rich documentary history linked to English occupation, unique examples of monumental architecture such as at Werowocomoco, and the potential to yield new information in undeveloped areas position the York as one of the most culturally significant waterways in American history.

The following recommendations have emerged from this study. The recommendations are both broad, containing general recommendations for future study, and specific, with recommendations focused on individual places of importance.

1. Connect modern-day Native communities to the eighteenth- and nineteenth-century landscapes.

Lacking in all previous ICL studies are detailed studies of places and communities for which few documentary records survive or which make specific mention of Native (versus non-Native) peoples. For example, ethnographic studies made during the late nineteenth and early twentieth centuries mention specific places where Native people lived or worked in the landscape but only speculate about how these places relate to known places in a deeper history. One exception to this may be among the Pamunkey, whose oral histories have been the subject of far greater study than the other tribal groups. The collection of new oral histories with a focus on gaps in documentary research may be able to answer questions as it relates to Native life during the nineteenth and twentieth centuries.

A long held and justifiable criticism by Native peoples throughout the Chesapeake has been that the focus of historians and archaeologists has been on the Contact period or seventeenth century (but see Rountree 1990 for exceptions). Such a focus, if not approached critically, tends to reify narratives of Native disappearance. This project, as with previous ICL research, has revealed just how relevant that criticism remains. When meeting with tribal representatives, the places most important to them were not necessarily those heavily studied by archaeologists and historians, but the places closer to home for them and consisting of landscapes in which they have lived for generations.

It is clear that tribal members have a deep sense of their connections to place, the surface of which has only been scratched by the current effort. This type of research can be useful as educational tools for non-tribal people. The Chesapeake Trail provides an exceptional place in which to tell these stories, linking landscapes evocative of the early seventeenth century and before then to the vibrant communities of the present.

Stories related to Native diaspora are also missing from these types of narratives (but see Spivey 2017). Further documentation of these diasporic landscapes, perhaps beginning with Richmond, could provide important ethnographic information about how Native people negotiated their way in an industrializing, market-based economy.

2. Continue the collection of oral history interviews with tribal members.

Spivey (2017) has collected oral histories related to twentieth-century Pamunkey lifeways and ceramic production. All three tribes should continue to collect oral histories and, importantly, archive them to ensure their long-term preservation. The local and Native knowledge possessed by elders and transmitted to other generations is historically and culturally valuable and rarely written down. Oral histories become a reasonable method for collecting and preserving that knowledge.

3. Nomination of properties to the National Register of Historic Places.

The Pamunkey Reservation is a National Historic Landmark (NHL) and includes additional structures listed on the National Register of Historic Places (NRHP). With the approval and support of the Pamunkey, a study of the historic and potentially historic structures and sites similar to the survey recently completed for the Mattaponi Tribe (Woodard and Moretti-Langholtz 2017) should be undertaken. This study should include an assessment of those properties currently listed in the NRHP and any threats or challenges affecting their status, even as it identifies additional properties for listing.

The Sharon Indian School, which serves as the tribal center of the Upper Mattaponi, was listed in the NRHP in 2007. The school is directly adjacent to the Indian View Baptist Church, which is intimately connected to the history of the Upper Mattaponi, including the Sharon Indian School. Built in 1942, the structure may be eligible for the National Register under Criteria A and B for its association with tribal leadership in the twentieth century and for its association with events in Upper Mattaponi history.

With Upper Mattaponi approval and support, the village of Adamstown should be considered for designation as a National Historic District. Numerous existing buildings associated with the tribal leadership during the nineteenth and twentieth centuries survive at Adamstown. A proposed district would roughly align with the bounds of Adamstown as identified by the Upper Mattaponi in Central Garage east of Virginia Route 360.

A study completed for the Mattaponi Tribe identified a number of structures on the Mattaponi Reservation as potentially eligible for the NRHP (Woodard and Moretti-Langholtz 2017). A potential next step is completion of nominations, including consideration of NHL designation for the reservation.

All of these efforts should be led by the respective tribes or conducted under their direction.

4. Build spatial datasets for future planning/documentation of tribal history.

Because many of the places identified by tribal consultants included individual buildings and dwellings within their immediate communities, it became apparent that being able to tell intimate stories for each location was well beyond the scope of this project. For the Pamunkey Reservation, the development of a GIS database could be used for land management and oral history purposes. The reservation itself is not subdivided or recorded as individual lots or parcels with the county or state. Land allotments and home sites are designated internally by the tribe. Building a spatial dataset combining house locations, utilities, and place histories (as opposed to tract histories) would be a way to document the lineage of particular structures or locations for future tribal researchers and tribal land planners. Similarly, spatial datasets for the Upper Mattaponi can be used to document the individual histories of specific properties and dwellings/buildings associated with people in their tribe.

5. Develop educational materials for non-tribal members.

Educational materials for the non-tribal public, including residents of the river valleys as well as those who visit the area, including via the Chesapeake Trail, could benefit local educational programs and heritage tourism. This would include developing interpretive material for the Werowocomoco site and Timberneck property (dubbed the Gateway to Werowocomoco). These materials are key for developing non-tribal awareness of Virginia's Native people and an understanding of their history and contemporary experiences. Any interpretive materials developed for Werowocomoco or Timberneck should emphasize Native lifeways and persistence and should be reviewed and approved by the Indians prior to distribution.

6. Gap analysis of key parcels.

A gap analysis of key parcels not under conservation should be performed. While it has been established that much of the Project Area is protected in one way or another (particularly along the south side of the York), it is important to note areas within the proposed ICL that are not protected. Areas where archaeological resources are anticipated and areas where historical data indicate important indigenous affiliations should be prioritized for acquisition or easement projects. Further, any areas with Native cultural values that are placed into conservation management or ownership should have explicit protection and management measures put in place for the protection of cultural resources. Any areas that will be developed for visitor experiences should have sufficient provisions in place to prevent destruction of the authentic resources that provide the reason for the visitation. Tribal consultation, participation, and approval is critical at all stages to insure tribal concerns are considered and addressed.

7. Documentation of Urban ICLs.

During the nineteenth century, railroads connected people of all stripes to urban areas up and down the east coast and out west. The Pamunkey have a documented association with Native communities that developed urban market centers in Richmond, Virginia, and in Philadelphia, Pennsylvania and the Upper Mattaponi have a documented association with Richmond, Virginia. In order to more accurately and fully document the story of Native people, include these areas as discontinuous ICLs. The stories of the individuals and families who moved to the city are less understood than those of people who remained and came under the focus of ethnographers for decades. A project focused on the Native diaspora would acknowledge Native mobility and strategies to survive in a world that was writing Native disappearance.

8. Expand the focus to other watersheds.

In their development of a methodology for identifying and representing ICLs, Sullivan, Chambers, and Barbery (2013) recommended a watershed-by-watershed approach, which has proven a useful launching point for subsequent ICL studies among the Piscataway and Rappahannock. In an overview of the Chesapeake watershed, Strickland and King (2016) agreed with the watershed-by-watershed approach. A watershed analysis serves to keep projects focused and create greater certainty in the expenditure of scarce public funds.

Nonetheless, limitations do exist with a focus on a single watershed. In fact, for this project, a portion of the Rappahannock River watershed is included in this study because that is where a seventeenth-century Mattaponi settlement was located following displacement from the homeland. Likewise, the Rappahannock ICL study included portions of the Mattaponi watershed because of a historic reservation straddling the two watersheds and the existing community of Indian Neck, which is located in both watersheds. Historically, considerable mixing of groups occurred in this area and it is an important locus for understanding resistance and adaptation to colonization.

In addition to these considerations, there are concerns among tribal stakeholders that the ICL cover historic political territories outside of the watershed boundaries. In the ongoing interest of the National Park Service to document priority watersheds throughout the Captain John Smith Chesapeake National Historic Trail, it is recommended that expansion to other watersheds such as the nearby Chickahominy and James rivers in Virginia be undertaken.

9. Conduct archaeological survey elsewhere in the river valleys.

The lack of archaeological survey in much of the greater York valley, including the Pamunkey and Mattaponi rivers makes it very difficult to develop the necessary regional context for understanding and interpreting Werowocomoco. Surprisingly little archaeological survey has been done in the Pamunkey and Mattaponi rivers (although some survey has taken place on the Pamunkey Reservation and the building survey on the Mattaponi Reservation includes associated archaeological contexts).

10. Acknowledgment of the government-to-government relationship for Federally-recognized tribes.

Now that the Pamunkey and Upper Mattaponi tribe have been formally recognized by the United States, it is important to establish appropriate government-to-government consultation protocols with the tribes. Federally-recognized tribes are no longer stakeholders but are considered sovereign entities, and Federal agencies have a legal responsibility to consult with tribes on a government-to-government basis. For more information about consultation with Federally-recognized tribes, the National Association of Tribal Historic Preservation Officers has published a report on best practices (NATHPO 2005). The Advisory Council on Historic Preservation has also published a number of guidance documents on government-to-government consultation.

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APPENDIX I
LIST OF PROJECT PARTICIPANTS

Staff

1. Julia A. King
2. Martha McCartney
3. Scott M. Strickland

Pamunkey Consultants

4. Chief Robert Gray
5. Layne Cook
6. Warren Cook
7. Lauren Fox
8. Allyson Gray
9. John Henry Langston
10. Dr. Ashley Atkins Spivey
11. Grover Miles

Upper Mattaponi Consultants

12. Chief Frank Adams
13. Ken Adams
14. Tommy Tuppence
15. Jimmy Adams
16. Jean Adams
17. Melvin Adams Jr.
18. Amanda McKinney
19. Brenda McKinney
20. Wilma Hicks
21. Joan Faulkner
22. Jay Gillespie

Mattaponi Consultant

23. Chief Mark Custalow

National Park Service

24. Cindy Chance
25. Carolyn Black
26. Kym Hall

Chesapeake Conservancy

27. Joe McCauley
28. Jacob Leizear

Non Tribal Stakeholders

The following non-tribal stakeholders participated in this project

1.) Fairfield Foundation/King William Historical Society
2.) Virginia Department of Conservation and Recreation
3.) Virginia Department of Forestry
4.) King and Queen County Planning and Zoning
5.) King William County Planning and Zoning
6.) York County Planning and Zoning
7.) Naval Weapons Station, Yorktown
8.) York County Historical Museum

APPENDIX II
CONSENT FORM, ST. MARY'S COLLEGE OF MARYLAND

CONSENT FORM
YORK-MATTAPONI-PAMUNKEY INDIGENOUS CULTURAL LANDSCAPE PROJECT
St. Mary's College of Maryland
St. Mary's City, Maryland

You are invited to participate in a project related to the identification of the York-Mattaponi-Pamunkey Indigenous Cultural Landscape. This project aims to gather information about past and contemporary land use by Native people in the greater York River watershed. You will be asked to attend two all-day meetings and participate in a driving tour during one of those meetings in an effort to identify landscapes and properties important to tribal people. The information collected as part of this project will be included in a report prepared for the Chesapeake Conservancy and the National Park Service Chesapeake Bay Office and will be used to develop land preservation and interpretive strategies. You and the group you represent will receive copies of all final reports generated for this project.

Your participation is voluntary and you may choose not to participate at any time. Your decision whether or not to participate will not jeopardize your future relations with SMCM. You will be interviewed about land use in the watershed, and this interview will be recorded. While we do not foresee any risks to participating, you may refuse to answer any question that you do not wish to answer.

Please direct questions about the project to Julia A. King, professor, at jking@smcm.edu, (240) 895-4398, 18952 East Fisher Road, St. Mary's City, MD 20686. Please direct questions regarding your rights as a project participant to Jennifer Tickle, Chair of the Institutional Review Board, at irb@smcm.edu, 240-895-4359, 124 Goodpaster Hall, Department of Psychology, 47645 College Drive, St. Mary's City, MD 20686.

In consideration of the recording and documentation of information related to Piscataway use of the Nanjemoy / Mattawoman watersheds by St. Mary's College of Maryland, I, the participant,

(print name)_____, hereby grant, assign, and transfer to SMCM the rights to report, publish, duplicate, or otherwise use and dispose of the information recorded on
(date)_____. This includes the rights of publication in any form, including electronic.

Note any restrictions:

Narrator's name: _____
Narrator's address: _____
Narrator's phone number: _____

Signature of Narrator: _____ Date: _____

For SMCM: _____

Signature for SMCM: _____ Date: _____

APPENDIX III
PAMUNKEY TRIBE NON-DISCLOSURE AGREEMENT

Pamunkey Indian Tribal Resource Center
Non-Disclosure Agreement

I, _____,
(Name)

acknowledge that I have accepted a temporary engagement with the Pamunkey Indian Tribe.

I further acknowledge that any information obtained while working with the Tribe is to remain strictly confidential. This includes information pertaining to;

- Members, families, employees
- Items or sites of historical, cultural, or natural significance
- Tribal Government or economic matters
- General Pamunkey Indian Affairs

For any information that I obtain to be made public knowledge, I understand that I must have written consent from Chief and Council.

I recognize that failure to maintain confidentiality will be managed at the discretion of Chief and Council to include immediate dismissal and/or possible legal action against me.

_____
Signature, Date

_____
Chief Printed Name, Signature, Date

Edited: January 11, 2018

APPENDIX IV
INDIAN PLACE NAMES WITHIN AN INDIGENOUS CULTURAL LANDSCAPE

Derived from McCartney and Rountree (2017)

ACCONOC

Indian Town: New Kent County; on the right bank of the Pamunkey River; located on the east side of the upper reaches of Hill Marsh, south of a nameless tributary (1610).

ACCOSUMWINCK

Indian Town: King William County; on the left bank of the Pamunkey River; on the downstream side of Cohoke Mill Creek's mouth (1608).

ACQUINTON

Creek and Swamp: King William County; a tributary of Jack's Creek, itself a tributary of the Pamunkey River on its left side (1751).

AMACOENCOCK

Indian Town: King and Queen County; on the left bank of the Mattaponi River, near Walkerton; identity uncertain (1608).

APOSTOQUO

Creek and **Swamp:** King and Queen County; probably Grass Creek, a tributary on the Mattaponi River's left side (1653).

APPOCANT

Indian Town: New Kent County, a tributary on the Chickahominy River's left side, near Toe Ink Swamp (1608).

AQUINTENOCCO

Creek and Swamp: King and Queen County; a tributary on the Mattaponi River's left side; west of the courthouse and now known as Courthouse Creek (1653).

ARMOGOTEGUE

Creek: King William County; tributary of the Mattaponi River's right side, near its junction with York River; in the vicinity of Port Richmond (1652).

ARRACAICO

Branch and Swamp: King and Queen County; a tributary on the Mattaponi River's left side; close to Goalders Creek (1653).

ARRATICO

Creek: King and Queen County; a tributary on the Mattaponi River's left side; possibly Dixon Creek (1652).

ARSANTANS

Creek and Swamp: King and Queen County; a tributary on the Mattaponi River's left side; now called Corbin Creek; Tastine Swamp is at the creek's head (1652).
Meadow: King and Queen County; near the creek of same name (1676).

ASKAKEP

Indian Town: New Kent County; probably in the upper reaches of Diascund Creek (1608).

ASKECOCACK

Indian Town: King William County; on the right bank of the Pamunkey River just above Grimes Landing (1608).

ASSANAMAYUSCOCK

Branch, Creek, and Swamp: King and Queen County; a tributary on the Mattaponi River's left side; now Garnetts Creek and its tributaries (1650).

ASSESQUIN

Creek: Hanover County; a tributary on the Pamunkey River's the right side; now called Whiting Swamp (1751).

ATTAMTUCK

Indian Town: New Kent County; a tributary on the Pamunkey's River's right bank near the head of Holt's Creek (1610).

ATTAMUSPINCKE

Indian Town: New Kent County; on the Chickahominy River's left bank below Toe Ink Swamp (1608).

CANTAUNKACK

Indian Town: Gloucester County; on the York River's left bank, between Carter and Aberdeen Creeks (1610).

CAPAHOSACK

Creek: York County; a tributary on the York River's right side; analogous to Carter's Creek, at Camp Peary (1770).

CAPAHOSIC

Creek: Gloucester County; a tributary on the York River's left side; by 1826 known as Cedar or Cedarbush Creek (1691).
Indian Town: Gloucester County; on the York River's left bank, between Timberneck and Cedarbush Creeks (1608).
Place: Gloucester County; on the York River's left bank, near the town of the same name (1608).

CASSAPECOCK

Indian Town: New Kent County; somewhere on the Pamunkey River's right bank; location very uncertain (1612).

CATTACHIPTICO

Indian Town: King William County; on Pamunkey River's left bank, on the upstream side of Moncuin (Manquin) Creek's mouth, and above Goddin's Island (1608).

CAWUNKACK

Indian Town: New Kent County; on the Pamunkey River's right bank, opposite Sweet Hall Marsh and east of White Oak (1608).

CHAMOCKIN

Place: near the boundary between New Kent and Hanover Counties; on the Pamunkey River's right bank, between Matadequin and Black Creeks (1653).
Swamp: Hanover County; a tributary on the right side, being the first branch near the mouth, of Matadequin Creek, itself a tributary on the Pamunkey River's right side (1787).

CHEPECO

Indian Town: somewhere on the Pamunkey or Mattaponi River; location very uncertain (1612).

CHESPAIACK

Path: King and Queen County; between the Mattaponi River and Dragon Swamp, which is the headwaters of the Piankatank River (1663).

CHICKAHOMINY

Fort: New Kent County; an Indian-built fort on the right side of the Pamunkey River (1657).
Fort: King William County; an Indian-built fort on the Mattaponi River's right bank, probably between Aylett and Herring/Dorrell Creeks (1683).
Indian Town: King and Queen County; on the Mattaponi River's left bank, facing Rickahock Bar (1684).

CHISKIACK

Creek: York County; a tributary on the York River's right side; now called Indian Field Creek (1611).
Creek: Gloucester County; a tributary on the Piankatank River's right side; modern Ferry Creek (1648).

Creek: Mathews County; a tributary on the Piankatank River's right side; modern Wadinger Creek (1642).
Indian Town and Territory: York County; on the York River's right bank, downstream from Indian Field Creek (1607).
Indian Town: Gloucester and Mathews Counties; on the Piankatank River's right bank (1651).
Path: Gloucester and King and Queen Counties; located between the Poropotank and Mattaponi Rivers and extending northeastward to Ferry Creek on the Piankatank River (1652).

COHOKE

Creek, Swamp, and Marsh: King William County; a tributary on the Pamunkey River's left side (1653).

COUSIAC

Creek and Marsh: New Kent County; a tributary on the Pamunkey River's right side; present Mill Creek and Cooks Mill Pond (1662).

CUSTIPA

Place: New Kent County; in the headwaters of Chickahominy River (1639).

HEARTQUAKE

Creek: King and Queen County; on the Mattaponi River's left side, west of Little Plymouth (1682).
Swamp: King and Queen County; on the Mattaponi River's left side; the headwaters of Heartquake Creek (1665).

HUNKEPEN

Point: New Kent County; on the Pamunkey River's right bank, near Cattail Swamp and Black Creek (1653).

INDIAN BRIDGE

Place: York County; Indian-built footbridge near the Chiskiack Indians' old town; probably near Indian Field Creek (1651).

INDIAN BRANCH

Branch: Gloucester County; a swamp at the head of the Ware River; probably Beaverdam Swamp (1663).

INDIAN CABIN

Neck: York and James City counties; between the headwaters of Queens Creek and Long Hill Swamp (1653).

INDIAN FIELD

Creek: York County; a tributary on the York River's right side; originally known as Chiskiack or Keeskiah Creek and Digges Creek; modern Indian Field Creek (1857).

Path: New Kent County; on the York River's right bank; a trail between Ware Creek and Wahrani Swamp, near the head of Diascund Creek (1663).

INDIAN FERRY

Ferry: King William and King and Queen Counties; a crossing between Chelsea Farm, in King William, and the mouth of Old Mill Creek (1653).

INDIAN FORT

Place: King William County; on the Pamunkey River's left bank; upstream from Manquin Creek; also known as the Manskin fort and as Fort Royall (1645).

INDIAN PATH

Road: Gloucester County; a trail in the northeastern part the county, in Ware Parish, and extending toward the North River (1668).

INDIAN QUARTER CREEK

Creek: Gloucester County; a tributary on the York River's left side; somewhere in the eastern part of the county (1642).

INDIAN SPRING

Spring: Gloucester County; near the head of the Poropotank River (1642).
Spring: York County; on the York River's right bank; northeast of Middle Plantation, later known as Williamsburg (1646).

INDIAN TOWN

Community: King William County; same as the Pamunkey Indian Reservation on the Pamunkey River's left bank (1770).
Community: King William County; same as the Mattaponi Indian Reservation on the Mattaponi River's right bank (1864).
Swamp: King William County; a tributary on the Mattaponi River's right side; forms the western boundary of the Mattaponi Indian Reservation, adjoining Shanty Creek (1985).

INDIAN WEIR

Place: King and Queen County; on the Mattaponi River's left bank, probably near Jones Landing (1674).

KAPOSEPOCK

Indian Town: King William or New Kent County; somewhere along the Pamunkey River (1612).

KUPKIPCOCK

Indian Town: King William County; on the Pamunkey River's left bank, east of Sweet Hall Landing (1610).

MACHACOMICO

Swamp: King William County; a tributary on the Mattaponi River's right side in the vicinity of Herring Creek (1703).

MACHIMEDES

Creek and Swamp: part of the boundary between James City and New Kent Counties; a tributary on the York River's right side; modern Ware Creek (1653).
Place: eastern New Kent County; on the York River's right bank; land between Mill (Tankes Queens) and Ware (Matchemeedes) Creeks (1662).

MACHIPONGO

Creek: King and Queen (formerly Gloucester) County; a tributary on the Mattaponi River's left side; probably Garretts Creek (1653).
Place: King and Queen County; on the Mattaponi River's left bank; near Garretts Creek (1653).

MAMA SHEEMENT

Place: King and Queen or Essex (formerly New Kent) County; on the left side of the Mattaponi River, probably along the low ridge separating the Mattaponi and Rappahannock River valleys (1665).

MAMANASSY

Indian Town: King and Queen County; on the Mattaponi River's left bank; at or near Brookshire (1608).

MANGOHICK

Creek: King William County; a tributary on the Pamunkey River's left side; modern Millpond Creek (1703).

MANQUIN

Creek and Swamp: King William County; a tributary on the Pamunkey River's left side; present Moncuin Creek (1695).

MANSKIN

Fort: King William County; on the Pamunkey River's left bank; above Moncuin Creek; site of Fort Royall, established in 1645 (1662).
Indian Town: King William County; on the Pamunkey River's left bank (1608).
Indian Town: King William County; on the Pamunkey River's left bank; near Moncuin Creek (1670).
Place: King William County; on the Pamunkey River's left banknear Moncuin Creek; opposite Totopotomoy Creek's mouth (1666).

MANTAPIKE

Creek: King and Queen County; a tributary on the Mattaponi River's left side (1751).
Place: King and Queen County; on the Mattaponi River's left bank; downstream from Mantapike Creek (1653).

MANTUA

Ferry: King William County; on the Mattaponi River's right bank; above White Oak Landing (1864).

MAPSICO

Place: New Kent County; deed from Lewis Burwell to William Bassett (1668).

MARACOSSIC

Creek and Swamp: King and Queen and Caroline County; a tributary of Beverley Creek on the Mattaponi River's left side (1691).

MARTOUGHQUAUNK

Indian Town: King and Queen County; on the Mattaponi River's left bank, just above Walkerton (1608).

MATADEQUIN

Creek: boundary between New Kent and Hanover counties; a tributary on the Pamunkey River's right side (1649).
Creek: King William County; a tributary on the Pamunkey River's left; modern Herrick Creek and Olssons Pond (1650).
Path: New Kent County; a trail running west from Weyanock (now Cattail) Swamp, near the Pamunkey River, and crossing Matadequin Creek (1662).
Run: New Kent County; a branch of Diascund (or Tyascan) Swamp (1705).

MATCHUT

Indian Town: New Kent County; on the Pamunkey River's right bank, near Eltham Marsh (1608).

MATCHUTT

Indian Town: King and Queen County; on the Mattaponi River's left bank, between the mouths of Heartquake and Old Mill Creeks (1610).

MATTACOCK

Creek and Swamp: King William (formerly King and Queen) County; a tributary on the Pamunkey River's left side, near Cohoke Creek (1702).
Indian Town: Gloucester County; on the York River's left bank; on the east side of Adams Creek (1610).

MATTACOCY

Creek and Branch: King and Queen County; a tributary of the Mattaponi River not far from its division into three forks, the Matta, Po, and Ni Rivers (1826).

MATTAPONI

Creek: Gloucester County; a tributary on the York River's left side; downstream from PoropotankRiver; modern Adams Creek (1653).

Creek or Run: King and Queen and Essex Counties; a tributary of Dragon Swamp (1699).
Fort: King and Queen County; on the Mattaponi River's left bank at Newington, near Locust Grove and to the east of Walkerton (1653).
Indian Ferry: King William and King and Queen Counties; between Gleasons Marsh and Davis Beach, adjacent to Georges Swamp (1653.
Indian Town: King and Queen County; located on a tributary on the Mattaponi River's left side known as Hashwamankcott Swamp or Branch; modern Garnetts Creek (1672).
Indian Town: King and Queen or Essex Countys (1683).
Indian Town: King and Queen and/or Essex County; in the headwaters of modern Piscataway Creek, on the ridge between the Mattaponi and Rappahannock River valleys (1662).
Path: Essex, Gloucester, and Middlesex Counties; a two-pronged path that emanated from the post-1644 Mattaponi Indian town in King and Queen/Essex County. (1651).
River: boundary between King William and King and Queen Counties; a tributary on the York River's left side (1608).

MATTASACK

Creek: King and Queen (formerly New Kent) County; a tributary on the York River's left side; in the vicinity of Goalders Creek (1666).

MATTASUP

Swamp: King and Queen County; on the left side of the Mattaponi River; near Shanghai (1658).

MATTOONES

Creek: King and Queen (formerly Gloucester) County; a tributary on the Mattaponi River's left side; probably downstream from Mantapike Creek (1653).
Creek and Sunken Ground: New Kent County; a tributary on the Pamunkey River right side (1682).

MATUNSK

Indian Town: Hanover County; on the Pamunkey River's right bank, above Whiting Swamp's mouth (1608).

MECHUMPS

Creek: Hanover County; a tributary of Campbell Creek, itself a tributary on the Pamunkey River's right side; the creek's headwaters are in Ashland (1687).

MEHIXEN

Branch and Creek: New Kent and Hanover counties; a branch of Totopotomoy Creek, itself a tributary.on the Pamunkey River's right side (1665).
Creek: King William (formerly King and Queen) County; on the Pamunkey River's left side; it joins with Sullens Creek and two other tributaries and flows into the Pamunkey's left side (1701).
Fort: King William County; located on the left side of the Pamunkey River, probably near the creek of the same name (1676).
Place: New Kent County; on the Pamunkey River's right bank; above Totopotomoy Creek's mouth (1670).

MENAPUCUNT

Indian Town: King William County; on the Pamunkey River's left bank, just above Lee Marsh (1608).

MENCUGHTAS

Indian Town: Hanover County; on the Pamunkey River's right bank,near the mouth of Crump Creek (1608).

MENMEND

Creek: Hanover County; a tributary on the Pamunkey River's right side, across from Menmend or The Island; by 1672 the creek had become known as Totopotomoy Creek (1662).
Indian Town: King William County; large island in the Pamunkey River near Carter's Landing and east of Moncuin (formerly Manquin) Creek; modern The Island; formerly Warranucock Island (1662).

MONACK

Neck: City of Poquoson; on the left bank of the Northwest Branch of the Back River; where Brick Kiln Creek begins (1635).
Swamp: King and Queen County; near Dragon Swamp (1711).

MUTTAMUSSENSACK

Indian Town: King and Queen County; on the Mattaponi River's left bank,near Rickahock (1610).

MYGHTUCKPASSUN

Indian Town: King William County; on the Mattaponi River's right bank; across from the mouth of London Swamp and west of White Bank (1610).

NANTECOCK

Creek: New Kent County; probably a tributary of the Pamunkey River on its right side (1705).
Neck: New Kent County; adjacent to the creek of the same name, which is located on the right side of the Pamunkey River (1705).

NANTUPCOY

Neck: New Kent County; on the left side of the Chickahominy River; now a nameless neck of land adjacent to the upstream side of Diascund Creek's mouth (1656).
Run: New Kent County; on the left side of the Chickahominy River, adjacent to Diascund Creek and the neck of land formerly known as Nantepoy Neck (1681).

NECOTOWANCE

Creek: King William County; a tributary of the Pamunkey River on its left side; upstream from the Pamunkey Indian Reservation (1700).
Swamp: King William County; left side of the Pamunkey River; upstream from the Pamunkey Indian Reservation (1702).

NICKAHOOKE

Branch: New Kent County; a tributary of Totopotomoy Creek, which is a tributary of the Pamunkey River's right side (1680).

OCHAHANNAUKE

Indian Town: King William or adjacent county; probably on the Pamunkey River; location uncertain (1612).

OPPACTENOKE

Creek: King and Queen County; now called Garretts Creek, a tributary of the Mattaponi River's left side (1660).

OQUONOCK (or **OQUSNOCK**)

Indian Town: New Kent County; on the right side of the Pamunkey River's mouth; in the vicinity of Eltham Marsh and Mill Creek (1608).

ORACON

Creek: King and Queen County; just north of Exol Swamp, a tributary of Dragon Swamp (1864).

ORAPAGUS

Creek: New Kent County; a tributary of the Pamunkey River's right side; modern Big Creek (1662).

ORAPAX

Indian Town: New Kent County; at the head of Black Creek, a tributary of the Pamunkey River's right side, in the Chickahominy River's headwaters (1610).

OSAMKATECK

Indian Town: King William County; on the left side Pamunkey River; in the immediate vicinity of the Pamunkey Indian Reservation (1608). Note: Captain John Smith's map puts Accosuwinck in this location.

PACOSOMACO

Creek: King William County; a tributary of the Pamunkey River on its left side; in the vicinity of Moncuin Creek (1702).

PAMAMOMECK

Indian Town: King William County; below Jack's Creek, a tributary of the Pamunkey River's left side, and just upstream from the Pamunkey Indian Reservation (1662).

PAMAREKE

Indian Town: King William County; on the Pamunkey River on its left side (1612).

PAMPATIKE

Creek: King William County; on the Pamunkey River's left side; close to The Meadows and Moncuin Creek (1679).
Ferry Landing and Place: King William County; on the Pamunkey River's left side; downstream from The Meadows (1679).

PAMUNCOROY

Indian town: New Kent County; on Pamunkey River's right side; close to Rockahock Bar and upstream from White House Creek (1608).

PAMUNN

Place: New Kent County; the rounded land form adjacent to Eltham Marsh (1662).

PAMUNKEY

Indian Town: King William County; on the Pamunkey River's left side; between Cohoke and Herrick Creeks (1608).
Path: Charles City County; below the head of Chickahominy Swamp (1664)
Path: King William County; leading up Pamunkey Neck; beyond Cohoke Creek. Possibly an extension of the path of the same name in Charles City County (1670).
Place: King William County; on the Pamunkey River's left side; between Cohoke and Herrick Creeks; the territory of the Pamunkey Indians (1607).
Neck: King William County; the land between the Pamunkey and Mattaponi Rivers (1670).
River: the boundary between King William and New Kent Counties (1608).

PARACONOS

Indian town: Hanover County; on the Pamunkey River's right side; opposite Pampetike Landing 1608).

PASAUGHTACOCK

Indian Town: King and Queen County; on the York River's left side and upstream from Hockley Creek (1610).

PASSAUNKACK

Indian town: King William County; on the side of the Mattaponi River's right side, upstream from Aylett (1610).

PASTCOCK

Creek: King and Queen County; on the Mattaponi River's left side; east of the courthouse; modern Mitchell Creek (1751).

PEPETICO

Branch, Creek, and Swamp: King and Queen County; on the York River's left side; near the Mattaponi River's mouth; probably Goalders Creek (1653).

PIANKATANK

Bay: Mathews and Middlesex Counties; at the intersection of the Piankatank River and Chesapeake Bay (1607).
Creek: King and Queen County; on the York River's left side; upstream from the Poropotank River (1642).
Ferry: Middlesex and Gloucester Counties; a ferry crossing below Dragon Swamp (1678).
Indian Town: Middlesex County; in the immediate vicinity of Piankatank Shores and Woodstock (1608).
Place: Mathews and Middlesex Counties; in the territory adjoining the Piankatank River (1651).
River: the boundary separating Gloucester and Mathews Counties from Middlesex County; tributary of the Chesapeake Bay; the river's headwaters form Dragon Swamp (1608).
Swamp: the boundary between King and Queen County and Middlesex and Essex Counties; headwaters of the Piankatank River; now called Dragon Swamp or Run (1656).

POCKATAMANIO

Run: King and Queen County; a small unnamed stream on the on the left side of the Mattaponi River near Walkerton (1653).

POQUOSON

Creek or River: the boundary between the town of Poquoson (formerly York County) and the city of Hampton (formerly Elizabeth City County); later called the Old Poquoson, but became modern the Northwest Branch of the Back River (1634).
Creek or River: the boundary between the town of Poquoson and York County; often called the New Poquoson; a tributary of the Chesapeake Bay (1635).
Places: York County; on the right side of the York River's mouth; these marshy areas were variously called the Old Poquoson or the New Poquoson (1638).
Pond: York County; head of the Poquoson River, which is a tributary of the Chesapeake Bay (1662).
Swamp: a probable reference to the Dragon Swamp, which separates Middlesex and Gloucester Counties (1659).

POROPOTANK

Creek: Gloucester County; on the York River's left side; now called Adams Creek, just east of the Poropotank River (1670).
Indian Town: Gloucester County; on the York River's left side; upstream from the Poropotank River's mouth (1610).
River or Creek: part of the boundary between Gloucester and King and Queen Counties; on the York River's left side (1611).
Swamp: Gloucester and King and Queen Counties; on the York River's left side; at the head of one of main branches of the Poropotank River (1651).

POTAUNCAC

Indian Town: New Kent County; on the Pamunkey River's right side; in the vicinity of Cousaic Marsh (1608).

POWAKEI

Swamp: King and Queen County; on the Mattaponi River's left side; near Walkerton; probably Clark Swamp (1663).

POWHATAN

Bay: Gloucester County; on the York River's left side; modern Purton Bay; downstream from the Poropotank River (1666).
Creek: Gloucester County; a tributary of Purtan Bay on the York River's left side; farthest up the York of the three creeks flowing into that bay (1666).
Path: Gloucester County; trail probably leading to Purtan Bay and Werowocomoco (1664).

PUTANAK

Creek: James City and York Counties; on the York River's right side; probably in the vicinity of Skimino Creek (1642).

QUACKCOHOWAON

Indian town: King William County; on the Mattaponi River's right bank; in the vicinity of Horse Landing (1608).

QUEENS

Creek: York County; a tributary on the York River's right side; the eastern branch is now known as Cheatham Pond (1637).
Creek: Mathews (formerly Gloucester) County; a tributary on the Piankatank River's right side, by means of Hills Bay (1653).

RAPTESTANK

Place: King William County; a neck of land at the confluence of the Pamunkey and Mattaponi Rivers; later known as Pamunkey Neck (1611).

RICKAHOCK

Indian Town: New Kent County; on the Pamunkey River's right bank, between Black and Big Creeks (1608).
Indian Town: King and Queen County; on the Mattaponi River's left bank at Rickahock (1689).
Path: James City, York, and New Kent and York Counties; paralleled the right bank of the York River, passing close to the Chickahominy River (1650).

Place: New Kent County; on the Pamunkey River's right bank; between Black and Big Creeks; the area near Rockahock Bar (1662).

Place: King and Queen County; on the Mattaponi River's left bank; upstream from Garnetts Creek; name still in use (1649).

RICKENAW

Creek: King and Queen County; a tributary of Chapel Hill Creek, which flows into the Mattaponi River on its left side; close to the head of Piscataway Creek (1917).

ROMANCOKE

Place: King William County; on the Pamunkey River's left bank; above West Point and across from Hill Marsh (164[-]).

SHAMAPINT

Indian Town: New Kent County; on the Pamunkey River's right bank; upstream from the mouth of Black Creek (1608).

SKIMINO

Creek and Swamp: part of the boundary between York and James City Counties; a tributary on the York River's right side; the western boundary of Camp Peary (1651).
Place: York County; area on the downstream side of Skimino Creek; on the York River's right bank (1654).

TANKES QUEENS

Creek: New Kent County; a tributary on the Pamunkey River's right side; now called Mill Creek (1654).

TANX

Creek: Gloucester County; a tributary on the York River's left side ; in the immediate vicinity of Porpopotank River; possibly modern Poropotank Swamp (1652).

TASKINAS

Creek: James City County; a tributary on the York River's right side; downstream from Ware Creek (1662).

TATTOPECKSICK

Field and Spring: King and Queen County; on the Mattaponi River's left side; near the headwaters of Garnetts Creek (1658).

TOMACORECON

Swamp: King and Queen County; a tributary on the Mattaponi River's left sideat Walkerton; modern Walkerton Branch (1663).

TOTOPOTOMOY

Creek and Swamp: Gloucester County; a tributary on the right side of the Poropotank River, which is a tributary on the York River's left side;; modern Poplar Springs Branch (1651).
Creek: Hanover County; a tributary on the Pamunkey River's right side; upstream from the U.S. 360 bridge (1662).

TUCKA COMMONS

Marsh and Run: King William County; on the Pamunkey River's left side; now called Sweet Hall Marsh (1657).

TUSSUCKEY

Branch: King and Queen County; on the Mattaponi River's left side; at the head of the nameless stream just east of Locust Grove (1682).

UTENSTANK

Indian Town: King and Queen County; on the Mattaponi River's left bank; just above the mouth of Georges Swamp and opposite Roanes Landing (1610).

UTTAMARKE

Creek: Mathews County; a tributary on the Piankatank River's right side; modern Dancing Creek, a small stream below Ferry Creek (1655).

UTTAMUSAK

Indian Town: King William County; on the Pamunkey River's left bank; a site between two small, nameless streams just east of Sweet Hall Landing (1610).

VINCOPO

Creek: York County; a tributary on the York River's right side; two miles northwest of Queens Creek (1638).

WAHRANI

Branch, Creek, and Swamp: New Kent and James City Counties; tributaries on the left side of Diascund Creek, itself a tributary on the Chickahominy River's left side (1638).

WARRANUNCOCK

Island: King William County; located in the Pamunkey River; below the mouth of Monquin Creek; now known as The Island (1649).
Path: King William County; a trail that led from the southeastern part of Pamunkey Neck toward the island of the same name (1653).

WASHASATIACK

Indian Town: King William County; on the Pamunkey River's left bank; above the mouth of Mehixon Creek (1608).

WEROWOCOMOCO

Indian Town: Gloucester County; on the York River's left bank; at Purtan Bay (1608).

WIGHSAKAN

Indian Town: Gloucester County; on the York River's left bank; in the vicinity of Fox Creek (1608).

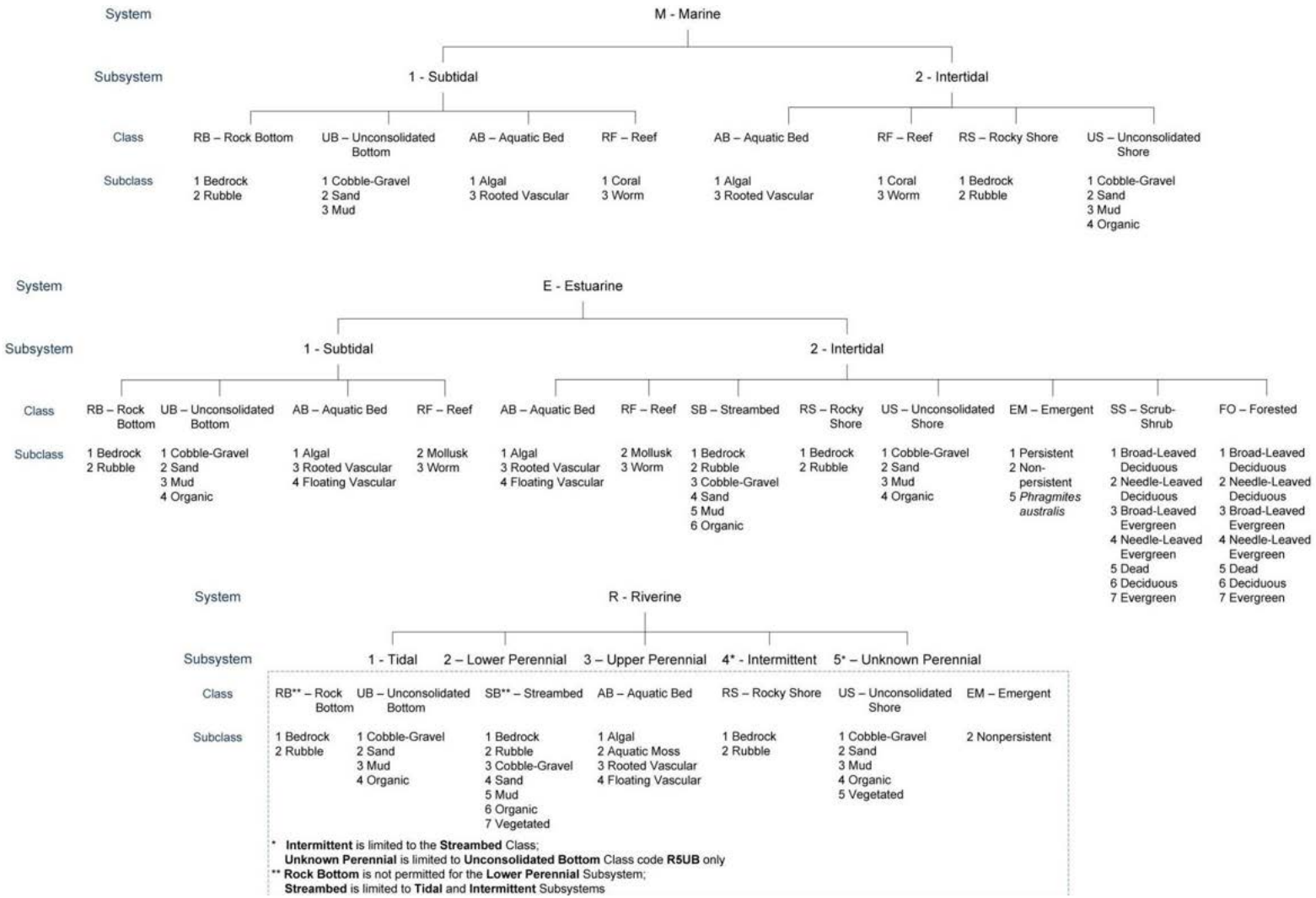
WINKEPIN

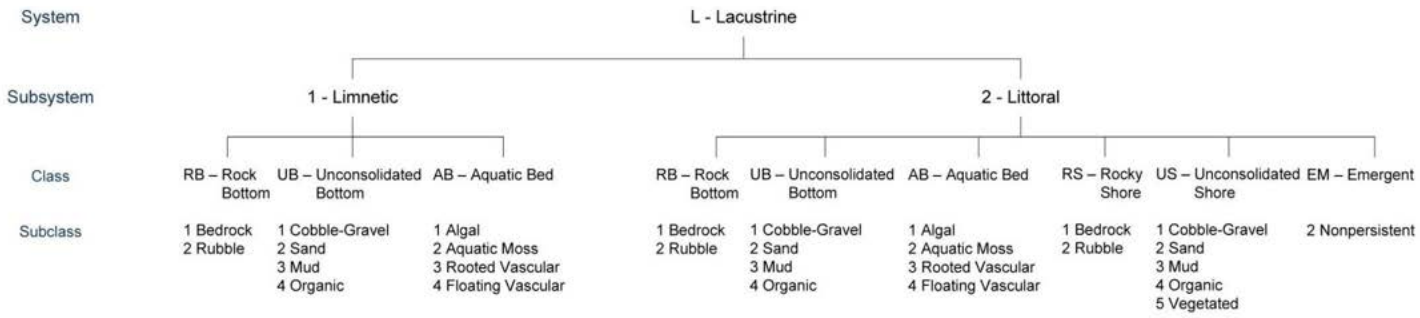
Swamp: King and Queen County; a tributary of Dragon Swamp, which is the headwaters of the Piankatank River (1658).

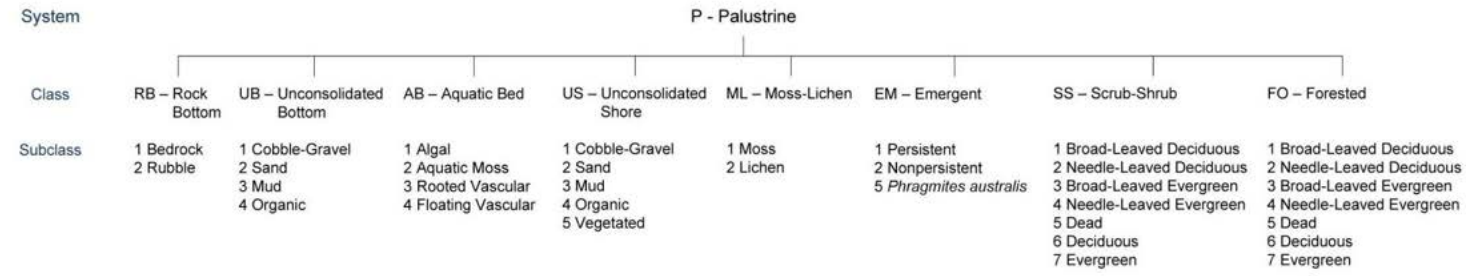
YOUGHTANUND

Indian Town: Hanover County; on the Pamunkey River's right bank, downstream from the mouth of Tottopottomoy Creek (1607).
River: boundary between King William, New Kent, and Hanover Counties (1608).

APPENDIX V
NWIS WETLAND CLASSIFICATION SCHEMA







MODIFIERS

In order to more adequately describe the wetland and deepwater habitats, one or more of the water regime, water chemistry, soil, or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system.

Water Regime			Special Modifiers	Water Chemistry			Soil
Nontidal	**Saltwater Tidal**	**Freshwater Tidal**		**Coastal Halinity**	**Inland Salinity**	**pH Modifiers for all Fresh Water**	
A Temporarily Flooded	L Subtidal	S Temporarily Flooded-Tidal	b Beaver	1 Hyperhaline	7 Hypersaline	a Acid	g Organic
B Saturated	M Irregularly Exposed	R Seasonally Flooded-Tidal	d Partly Drained/Ditched	2 Euhaline	8 Eusaline	t Circumneutral	n Mineral
C Seasonally Flooded	N Regularly Flooded	T Semipermanently Flooded-Tidal	f Farmed	3 Mixohaline (Brackish)	9 Mixosaline	i Alkaline	
E Seasonally Flooded/ Saturated	P Irregularly Flooded	V Permanently Flooded-Tidal	h Diked/Impounded	4 Polyhaline	0 Fresh		
F Semipermanently Flooded			r Artificial	5 Mesohaline			
G Intermittently Exposed			s Spoil	6 Oligohaline			
H Permanently Flooded			x Excavated	0 Fresh			
J Intermittently Flooded							
K Artificially Flooded							

APPENDIX VI
AUTHOR BIOGRAPHIES

SCOTT M. STRICKLAND is Project Archaeologist, GIS Specialist, and adjunct professor of anthropology at St. Mary's College of Maryland. He has degrees from St. Mary's College of Maryland and the University of Southampton (U.K.). Strickland has been at the forefront of using GIS and other spatial technologies to reconstruct Native and colonial landscapes and link these landscapes to modern ones.

JULIA A. KING is professor of anthropology at St. Mary's College of Maryland where she studies, teaches, and writes about Chesapeake and Middle Atlantic history. She has degrees from the College of William and Mary, Florida State University, and the University of Pennsylvania. King is a past president of the Society for Historical Archaeology (2003) and, from 2003 until 2012, served as an Expert Member on the Advisory Council on Historic Preservation.

MARTHA W. MCCARTNEY is a graduate of the College of William and Mary. She was employed in the Virginia Research Center for Archaeology for many years as a historian and program coordinator. Since 1986, she has worked as an independent scholar, providing research support to Virginia's archaeological community and universities. She was project historian for the National Park Service's Jamestown Archaeological Assessment and is the author of fourteen books, plus numerous articles and reports. She has received six historic preservation awards.