

ARCHAEOLOGICAL ASSESSMENT

DISTURBANCE ASSESSMENT

Disturbance along the APE was assessed by a review of aerial photographs, supplemented by an exploration of the study area by car and on foot. The results are shown in Figures 21-25. The main types of disturbance are:

- Construction of houses and commercial buildings
- Grading done during the construction of SR 1 (especially around interchanges)
- Stormwater management ponds and other water controls
- Spoil dumping along the C&D Canal

Between SR 71 and Christiana, most of the APE has been disturbed by construction of one kind or another. Besides the visible structures, there has been extensive grading around the interchanges at SR 7, SR 71, and U.S. Route 40.

Areas that do not appear to be disturbed include the large agricultural field on the north side of the C&D Canal, west of existing SR 1; the banks of Dragon Run; the open fields between Wrangle Hill and Bear; and the wooded areas between Christiana Town and Christiana Mall.

EXPECTED POTENTIAL FOR ARCHAEOLOGICAL RESOURCES

The results of the previous archaeological surveys have shown that potentially significant archaeological sites are common in and near the study area. Additional archaeological sites can be expected in undisturbed areas that will be impacted by new construction.

Expected Site Types

Prehistoric Camps

The most common type of archaeological site in the project vicinity is the small prehistoric site dominated by stone artifacts, called “lithic scatters,” “procurement sites,” or “camps.” Surveys for this segment of SR 1 located 15 of these sites within the study area. Most of them seem to date to the Woodland I period, with some Woodland II presence and very few Archaic artifacts. Only one of these sites, Wrangle Hill, was determined eligible for listing in the National Register; however, the presence at Wrangle Hill of large storage pits containing numerous artifacts shows that the presence of such sites cannot be written off without evaluation. A single large pit feature was also found at the Dragon Run B Site. These sites are found on well-drained ground overlooking streams or swamps, often on low rises described as “hills” or “knolls.”

Prehistoric Base Camps

Larger prehistoric sites are generally associated with large streams or other large wetlands. Two such sites were found along this segment of SR 1: the Snapp Site (7NC-G-101), which borders

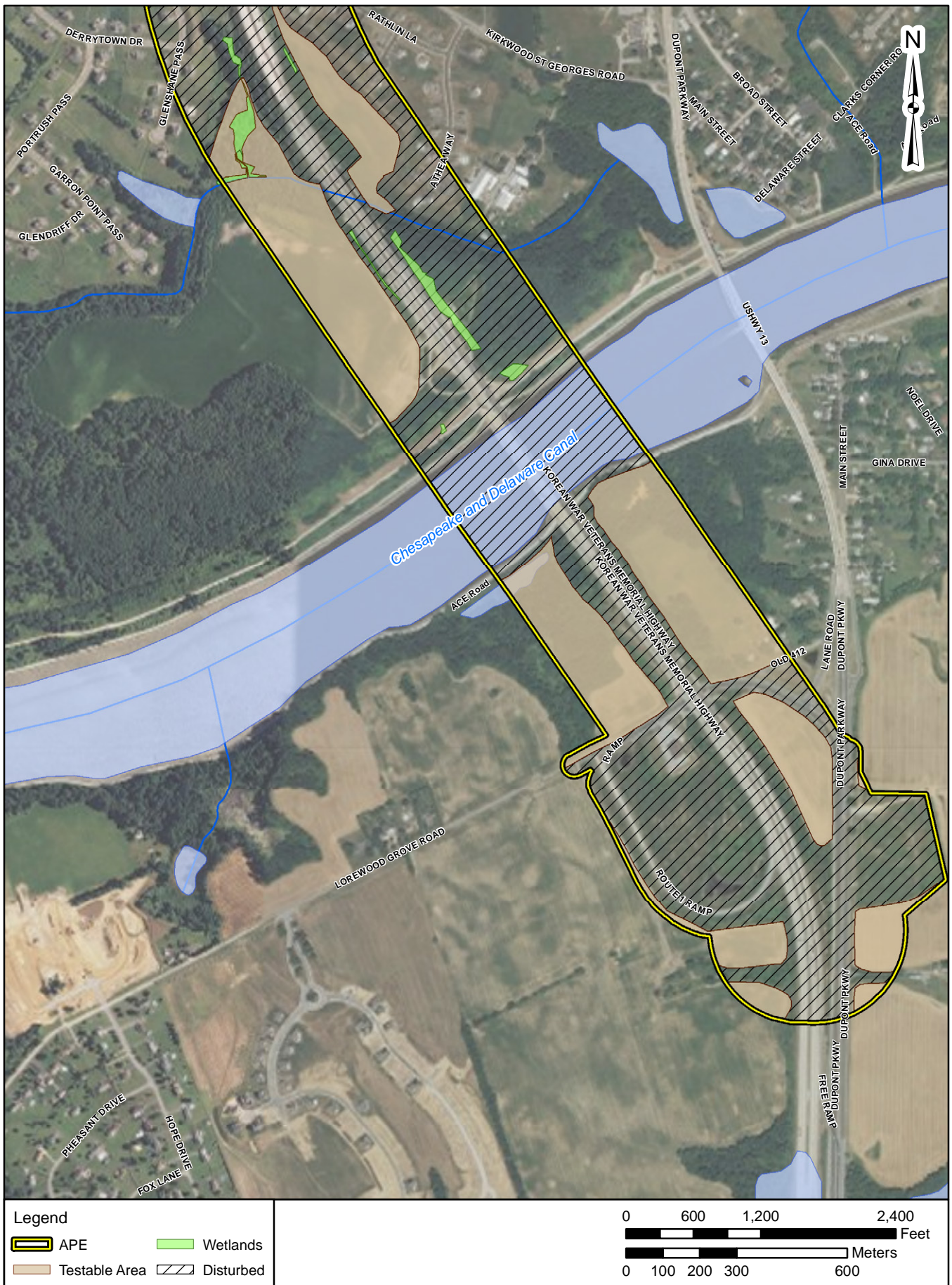


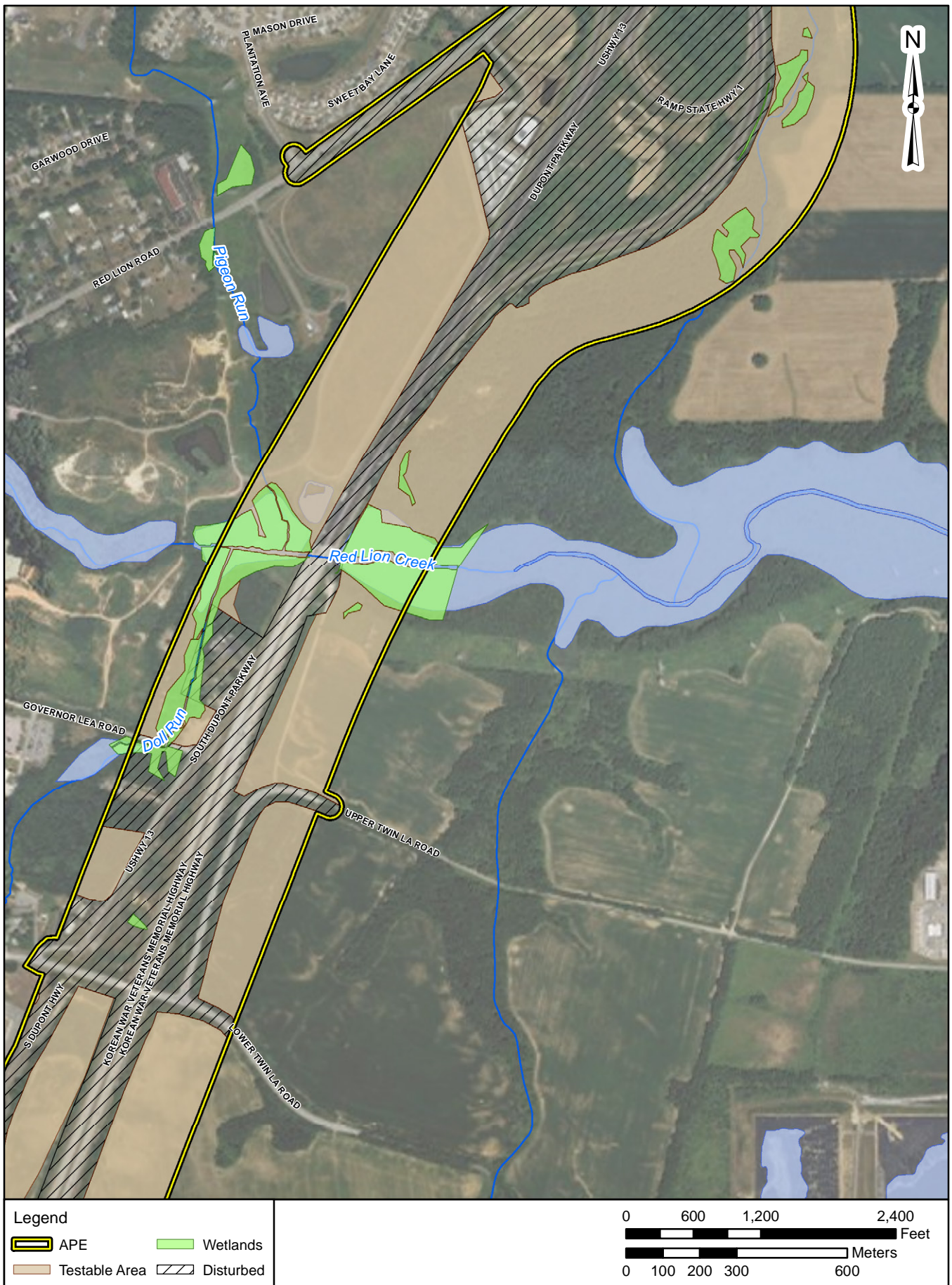
FIGURE 21: Disturbed and Testable Areas in the APE, Part 1

SOURCE: ESRI 2012



FIGURE 22: Disturbed and Testable Areas in the APE, Part 2

SOURCE: ESRI 2012







Legend	
	APE
	Wetlands
	Testable Area
	Disturbed

FIGURE 23: Disturbed and Testable Areas in the APE, Part 3

SOURCE: ESRI 2012



FIGURE 24: Disturbed and Testable Areas in the APE, Part 4

SOURCE: ESRI 2012



FIGURE 25: Disturbed and Testable Areas in the APE, Part 5

SOURCE: ESRI 2012

the C&D Canal (formerly St. Georges Creek), and the Lewden-Greene Site (7NC-E-9), which borders the Christina River. The Snapp Site has been very extensively excavated, and the Lewden-Greene Site received very thorough and extensive Phase II testing before being determined not eligible for listing in the National Register. Additional sites of this type would only be expected along these same streams or Red Lion Creek, at or below its confluence with Doll Run.

Farms and Rural Residences

Outside the immediate environs of Christiana, few historic sites were encountered during the previous surveys for SR 1. Numerous nineteenth-century farms stood in the area, but many are still visible as either standing structures or ruins. Should any such sites be impacted by new construction, Phase I archaeological investigation should be carried out to determine if potentially significant archaeological deposits are present.

Besides nineteenth-century farms, the types of historic sites that might be present in the study area would include tenant residences of the nineteenth century and farms from the eighteenth century. Such sites are most likely close to Christiana or along roads, but they can be found on almost any well-drained, level or gently sloping location.

Commercial Sites

Several types of businesses were common in rural Delaware, including taverns, blacksmith shops, and stores. All three were generally associated with roads and often with crossroads; a blacksmith shop has already been documented in the APE at Wrangle Hill, next to the intersection of the King's Highway and Wrangle Hill Road in the former hamlet of Bowersville. Most such nineteenth-century establishments are shown on maps, or else were associated with residences shown on maps; however, before 1849 such businesses might have escaped recording in any form.

Cemeteries

Small family graveyards were once a regular feature of the Delaware landscape. Two have been found in the APE, one at Woodside Farm (Site 7NC-E-98) during the archaeology for SR 1, and the Partridge Family cemetery north of Christiana. Larger, community cemeteries are also present in the APE, such as the one at the church. Cemeteries present special legal issues, handled under Delaware state law, as well as cultural resource concerns. Cemeteries can be found eligible for listing in the National Register under Criterion D, because they are rich sources of information about the past. When a National Register-eligible cemetery has to be moved, the exhumations are performed by archaeologists so that cultural and biological data can be recorded. Usually an osteologist is part of the project team.

ASSESSMENT OF RESOURCE SIGNIFICANCE

The assessment of archaeological resource significance should explicitly address the National Register evaluation criteria, which must begin with a consideration of the values inherent in the

historic contexts and associated information needs or research topics that represent important knowledge within each context.

There is no reason to expect that archaeological resources in the APE have a strong association with historically significant events (Criterion A) or persons (Criterion B).

With regard to Criterion D, under which most archaeological resources are evaluated for National Register evaluation, the information potential of sites can be considered. The most relevant research questions or information needs include technology, industrial processes, and workplace conditions.

Prehistoric Research Questions

Prehistoric archaeological sites determined to be eligible for listing in the National Register are usually found to be significant under Criterion D because they contain important information about the past. The application of Criterion D requires that the investigators know what information about the past is important; sites cannot simply be evaluated according to how many artifacts or features they contain. Therefore any prehistoric archaeological sites in the study area must be evaluated according to their ability to answer research questions, not simply to produce artifacts or to provide more data about things that are already well understood. Prehistoric archaeology in the Middle Atlantic region has generally focused on a common set of research objectives, of which the main topics are chronology, subsistence, community patterning, ethnicity and migration, and technology.

Chronology

Archaeology as a science reaches deep into the past, and it allows us to observe the unfolding of human cultures over very long time spans. The archaeological record in Delaware spans at least 13,000 years. To investigate how human life has changed over this immense stretch of time, each manifestation of human activity, whether archaeological site or single artifact, should be assigned to its approximate date in the sequence. To understand change, the developmental steps must be put in the correct order. If sites, cultures, or artifacts are not placed in the proper sequence, their relationship cannot be understood. In eastern North America many archaeological sites are not stratified, or layered, but confined to a shallow layer not much deeper than the plowzone. Artifacts from 10,000 years are often mixed together in the same soil. How can we know how old they are, and begin to understand how they relate to each other? The complexity of this problem explains why archaeologists in this region are still very much focused on basic questions of chronology. Specifically, archaeologists regularly investigate which artifacts are truly “diagnostic” of a particular period or culture, and how old those diagnostic artifacts are. To attach absolute ages to artifact and cultures, radiocarbon dating is used supplemented by other techniques, such as thermoluminescence.

Important chronological questions are very much alive in Delaware. There are major doubts about the identification and definition of pottery types, such as Hell Island and Minguannan. Some Minguannan pots have decorated rims that are quite distinctive, but many do not, and in any case most sherds will not be from the rim. The body sherds are very similar to Hell Island

ware, which is supposed to date to an earlier period. At the Lewden Green Site body sherds were assigned by the investigators to these types, but how valid are these identifications? The dating of some types of projectile points presents similar problems. Narrow-bladed, stemmed points have been defined as Lamoka in New York and dated to a particular period, but Jay Custer has argued that in Delaware such points were made across a period of 4,000 years. Are the rather small, stemmed “pebble points” common in Delaware diagnostic of any particular culture, or are they instead a technological adaptation to working with small cobbles of chert and jasper? Triangular points have generally been assigned to the Woodland II period, related to the introduction of the bow and arrow. However, small triangular points were recovered from Archaic layers at the Abbott Farm Site near Trenton, New Jersey, and they are found throughout the Middle and Early Woodland (Woodland I) layers at the Pig Point Site in Maryland (Luckenbach et al. 2010). These questions are best investigated with stratified sites, of which none are likely to be found in the study area; however, datable feature contexts, such as the storage pits at the Wrangle Hill and Snapp sites, can provide important chronological clues, as can small sites that were apparently occupied during only one period, such as Dragon Run A and B.

Subsistence

One of the most basic questions of human life is how to obtain sufficient food. How people get their food influences everything else about their cultures, from the size of their communities and how often they move to the level of violence in the society and the relative status of men and women. Subsistence is also something that it is often possible to learn about through archaeology. Many foods leave direct evidence in the record, such as animal bones, shells of oysters, clams, and other mollusks, and charred seeds, which can be recovered from the soil using flotation. The use of other foods can be inferred from stone tools, such as grinding stones, net weights, and spearpoints. Even given this abundance of evidence, basic questions remain about what prehistoric people were eating. For example, the larger settlements of the Woodland I period were mostly along rivers. Why? The most common guess is that people were harvesting the spring runs of anadromous fish or the fall runs of eels; however, direct evidence, in the form of fish bones, is rare and vanishing in the region. Another possibility is the use of marsh roots, called Tuckahoe by historic-period Indians, but this has also not been proved archaeologically. Investigations of soil chemistry may provide some clues, since fish that live in salt water have different concentrations of certain elements (such as strontium) in their bodies than land-dwelling animals, and a site where millions of fish were butchered over the decades ought to build up a detectable difference in elemental abundance.

Community Patterning

How big were the groups that people lived in, and how much did they move around? These are key questions for understanding the life of the past. Jay Custer’s work on Delmarva prehistory was all based on a model of “fission-fusion” lifeways, especially in the Woodland I period. In many tribal and band-level societies, including some historic-period Indians, people lived in small, highly mobile groups for much of the year but sometimes came together in larger groups and stayed for an extended period in one favorable spot. Sometimes they lived in large groups for most of the year but dispersed into smaller groups to forage for food in lean seasons. Custer’s typology of archaeological sites recognizes large Archaic and Woodland I sites, with diverse

collections of artifacts and features, as “macro-band base camps,” that is, places where fission-fusion groups came together. Sites that are smaller but still diverse are “micro-band base camps,” places where smaller groups camped for some time. The smallest sites are “procurement” sites, stations where people camped briefly or worked while on foraging expeditions. Most archaeologists think that Custer’s site types ought to exist, but there are major problems with identifying them in the record. How could a site where a large group of people camped at intervals for a few years be distinguished from a site where a smaller group camped at intervals for centuries? One way to identify a macro-band camp might be to find single features that contain ceramics of several different but closely related types, such as might be made by the different micro bands of a fission-fusion society. The problem remains a difficult one.

Questions also surround the function of small “procurement” sites. Several such sites have been found in and around the study area, along ephemeral streams, and one, Wrangle Hill, was fully excavated. Wrangle Hill proved to contain several large pit features and a variety of stone tools, dating mainly to the Woodland I period. Judging from this information, there is little to distinguish between this small site and the large Snapp Site except size. Was there any such functional distinction, such as the one Custer posited between base camps and procurement camps, or was the site like Snapp, just a place visited more often over a longer period of time?

The Woodland II archaeology of the region raises similar questions. Marshall Becker (1976) has argued that the Lenape Indians of this area did not build large agricultural villages but continued to live in small, highly mobile bands and to focus on hunting and gathering. Jay Custer has made similar arguments for the particular area of southern New Castle and northern Kent counties, where many Woodland II sites are small camps confined to the wooded areas that border streams and swamps (Custer and Cunningham 1986:25). At the Lewden Green Site the remains of the Woodland I and Woodland II periods certainly seem very similar. Is there any record of Woodland II village life in this area, or any other indication of major changes in how the landscape was used?

Ethnicity and Migration

In the historic period Indians moved around a great deal; the wanderings of some tribes can be traced, from historical documents and tribal traditions, across hundreds of miles. How true this was of prehistoric peoples is much disputed. Archaeologists know that certain artifact types spread across large areas, but they disagree about whether this means that the people who made these artifacts moved, or whether people stayed in place but simply adopted new technologies. For example, around 2500 BC a new type of spearpoint called the Savannah River appeared in the Chesapeake region, and in Delaware. As the name implies, these tools were first made in the Southeast, in coastal Georgia and South Carolina. Does their appearance in Delaware mean that people from the south migrated into the region? Or was the design of these points, for some reason, so appealing that Delaware’s residents adopted the new form? The Indians who inhabited Delaware and the Chesapeake region in the 1500s mostly spoke Algonquian languages, which were spoken across a wide area. Some linguists believe that they originated around the Great Lakes a few thousand years ago, and therefore that the Algonquian speakers of Delaware and the Chesapeake were fairly recent immigrants from the northwest. The burials at Island Field are seen by some archaeologists as closely resembling burials in New York, and therefore as

evidence of an Algonquian migration between AD 500 and 800. The large jasper biface from the Snapp Site might be more such evidence. Are there any gaps or rapid changes in the archaeological record of the study area that might indicate the arrival of new groups of people, or, conversely, strong evidence of stable societies over long periods of time?

The sites in the Dragon Run drainage where debitage is dominated by ironstone raise just the question of ethnic identity in a different way. Are these sites evidence of a single band of people with a strong preference for this stone, or just of the proximity of a good source?

Technology

Questions of technology have long been prominent in prehistoric archaeology. Most artifacts contain within themselves a record of how they were made, and the investigation of these techniques can inform us about how craft work was done. It can also tell us about connections between people, since techniques were learned somehow and some spread across thousands of miles, from one people to another. The spread of ceramic technology across eastern North America is a fascinating case because no archaeologist has ever argued that it represents the spread of a particular people. Each tribe and band seems to have learned to make pottery from its neighbors in such an efficient way that this technology spread across a thousand miles within a few centuries.

Certain questions about prehistoric technology are very much alive in the Middle Atlantic region. For example, what does the variation in the style of projectile points mean? Are different point styles the markers of different cultures — an assumption sometimes called the “Coe Axiom,” after archaeologist Joffre Coe (1964) — or do the different shapes indicate different functions, as Jay Custer (1986) has argued? Another question is whether the difference in how cordage was made — X twist vs. Z twist — actually reflect ethnic differences, as has been claimed.

On the Edges of Archaeological Knowledge: Gender and Spiritual Life

Archaeologists have, of course, investigated many other questions about the past, from the prevalence of disease to ideas about astronomy and the heavens. Most of these topics require very special sorts of sites to investigate, which are not likely to be found in the study area. However, certain additional topics might be investigated, given the right circumstances. Archaeologists are very interested in gender roles, and these might, in principle, be reflected in sites in this region. Does a locus like the “Silo Pit Area” at the Puncheon Run Site in Dover, where there were several very large storage pits but hardly any artifacts (LeeDecker et al. 2005), represent a women’s work area, perhaps a site where plant foods were processed using wooden tools? Could the same be said of an area with pottery and fire-cracked rock, but no stone tools? Are small Woodland sites with stone tools and debitage, but no pottery, the remains of mostly male hunting or war parties? Is there, generally speaking, a reverse correlation between quarrying stone and the presence of pottery, which might indicate separate male and female spheres? Such arguments all rely on the assumption that the division of labor seen in historic-period Indians was very ancient, but this seems at least as plausible as the alternative and certainly worth investigation.

American Indians are often more interested in the religious side of their history than in such questions as what people ate. Such questions are difficult to investigate at typical archaeological sites; however, certain avenues that might prove fruitful. Is there evidence that activities were organized around the four cardinal directions, which play an important role in many Native American religions? Is there evidence of color symbolism, for example, the preference for red or black stone in certain tools or activities? Does the distribution of sites across the landscape represent notions of what kind of sites are spiritually positive as well as materially useful?

Historical Research Questions

Thanks largely to DelDOT's work, a large base of data is available for the archaeology of the 1730 to 1900 period in New Castle and Kent counties. Less is known about earlier periods. Since the area around Christiana was settled in the late 1600s, the potential for seventeenth-century sites exists in the study area, and such sites would be of high importance. Several homes of wealthy residents are known in the area, and extensive Phase II testing was carried out at the Read family home near Christiana. The only humble residence identified during earlier studies of SR 1 was the Heisler tenancy, which was established in the nineteenth century and occupied until 1968. No humble sites were identified in this area with deposits dating to before the Civil War.

The research questions for historical archaeology of rural domestic sites in this region were explored in a fairly recent historic context (Bedell 2002). This document separates broad areas of research from the kinds of data that can be used to study them. The main categories of inquiry identified in that document are:

- Domestic economy
- Culture and ethnicity
- Modernization
- Gender
- The lives of subordinate workers

Domestic economy includes both production of food and other goods in the household and the consumption of purchased objects. Culture and ethnicity includes questions of race and national origin, and also the formation of a regional, Delaware Valley culture, which was historically somewhat different from the culture of the Chesapeake region. Modernization has been offered by some historical archeologists as the main theme of the whole discipline, that is, investigating how material life in particular households changed (or did not) in response to the vast social and economic changes of the modern period. Gender issues are of course very prominent in historical studies but very difficult to approach archaeologically because archaeological deposits generally represent a whole household rather than one particular member. The same problem besets the study of subordinate workers, such as servants or enslaved people, who lived in the same household as their employers. Simply gaining knowledge about the past and the reconstruction of past lifeways are also research goals for many archaeologists.

The context also identifies data categories that can be used to investigate the following questions.

- Site locations
- Architecture
- Landscape, or site layout
- Faunal and floral remains
- Artifacts (including distribution across the site)
- Soil chemistry

Some of these categories, such as architecture and landscape, have sometimes been considered research areas in themselves (De Cunzo and Catts 1990). The categorization used by Bedell was intended to capture the difference between a question like “how big was the average house?” that can be answered using a clearly defined data set, and a more theoretical topic like modernization or ethnicity that would draw on several different kinds of data.

The area around Christiana may have been first settled by Dutch or Swedish colonists, so an early historic site in this area might represent an opportunity to study what De Cunzo and Catts (1990) called “comparative colonialism.” Any changes caused by the British takeover would be very difficult to disentangle from the other changes taking place at the same time, in the European economy and in the colonies as a whole, but the topic is certainly worth investigating.

Domestic sites are not the only possibilities in the study area. Other types that may be found include blacksmith’s shops, taverns, stores, and family cemeteries. These site types all have their own research issues, and cemeteries are also covered by their own laws. A complicating factor in the archaeology of stores is that many were also residences, either while they were stores or at a different time. Research questions for cemeteries are distinct from those for domestic or commercial sites and include:

- funeral practices
- demography
- disease
- diet
- rates of violent injury

POTENTIALLY SIGNIFICANT RESOURCES IN THE APE

The Thomas Williams Site (7NC-E-104)

The Thomas Williams Site was a farm dating from to 1720 to 1820, along the west side of U.S. Route 13, 700 feet north of the SR 72 intersection. The site was evaluated as part of an intersection improvement project, and the part within 60 feet of the then-existing roadway was found to be ineligible for listing in the National Register. However, the core of the site was outside that ROW, and it appears to remain undisturbed (Doms et al. 1995).

The Stanley Site (7NC-E-97)

This small prehistoric site along the east bank of Doll Run was judged potentially significant at the Phase I level (Hodny et al. 1989); however, it was outside the SR 1 ROW at the time so Phase II work was not carried out. Phase I discoveries included an apparently intact hearth.

Partridge Estate/John T. Simmons Farm (Site 7NC-E-149)

During the removal of human remains from the Partridge Memorial Cemetery, a small cellar hole was found dating to the 1700-1760 period. This feature, which was not excavated, must have been part of a residence from the first half of the 1700s. Also, the large farm described in the 1793 estate inventory of James Partridge, which must have been near the cemetery, has not been located. It may have been in the same location as the John T. Simmons farm, some buildings of which are still standing; the log core of the John T. Simmons house may even have been one of the 1793 houses (Traver 2000).

The Patterson Lane Site (7NC-E-53)

Table 6: Architectural Resources Probably Associated with Archaeological Sites

The Patterson Lane Site is the remains of an eighteenth- to twentieth-century farm that originally belonged to the important Read family. It was determined eligible for listing in the National Register after testing was carried out in 1988, but it was avoided during the construction of SR 1 and remains intact. This site is located just north of the Christina River, 200 feet from the shoulder of SR 1 (Catts et al. 1989).

NAME	CHRS No.	NOTE
John Lewden House	N00197	18 th -c. brick farm house
Site of Brookfield	N12123	19 th -c. farm house, burned

Sites Associated with Historic Buildings

No archaeological site has been defined in association with these historic structures, but one is certainly present (Table 6).

Locations with High Potential for Prehistoric Sites

During the walkover inspection of the study area, several locations were noted with particularly high potential for prehistoric archaeological sites (Table 7).

Table 7: Locations with High Potential for Prehistoric Sites

MAP KEY	LOCATION	DESCRIPTION
1, 2	North Bank of the C&D Canal	Exploration of the canal's north bank suggests that disturbance is limited to the immediate environs of the canal and existing SR 1. On the canal's west side, disturbance from spoil dumping appears to be limited to within 300 feet of the canal, and the large active agricultural field in this area seems undisturbed.
3, 4, 5, 6	Dragon Run	Both banks of Dragon Run appear to have very high potential for small prehistoric sites. Phase I testing for the Canal Segment of SR 1 seems to have been quite limited in this location.
7	Dragon Run to Wrangle Hill	Three small prehistoric sites were identified in this area during the SR 1 Phase I Survey, and many other, similar locations are present. Disturbance is limited to the immediate environs of the existing roadway and the obviously graded house yards.
8	Doll Run	Along Doll Run south of Red Lion Creek are several areas with high potential. Site 7NC-E-97, a potentially eligible site, has already been identified in this area.
9, 10, 11, 12	Red Lion Creek	Areas with high potential are present on both banks of Red Lion Creek.