

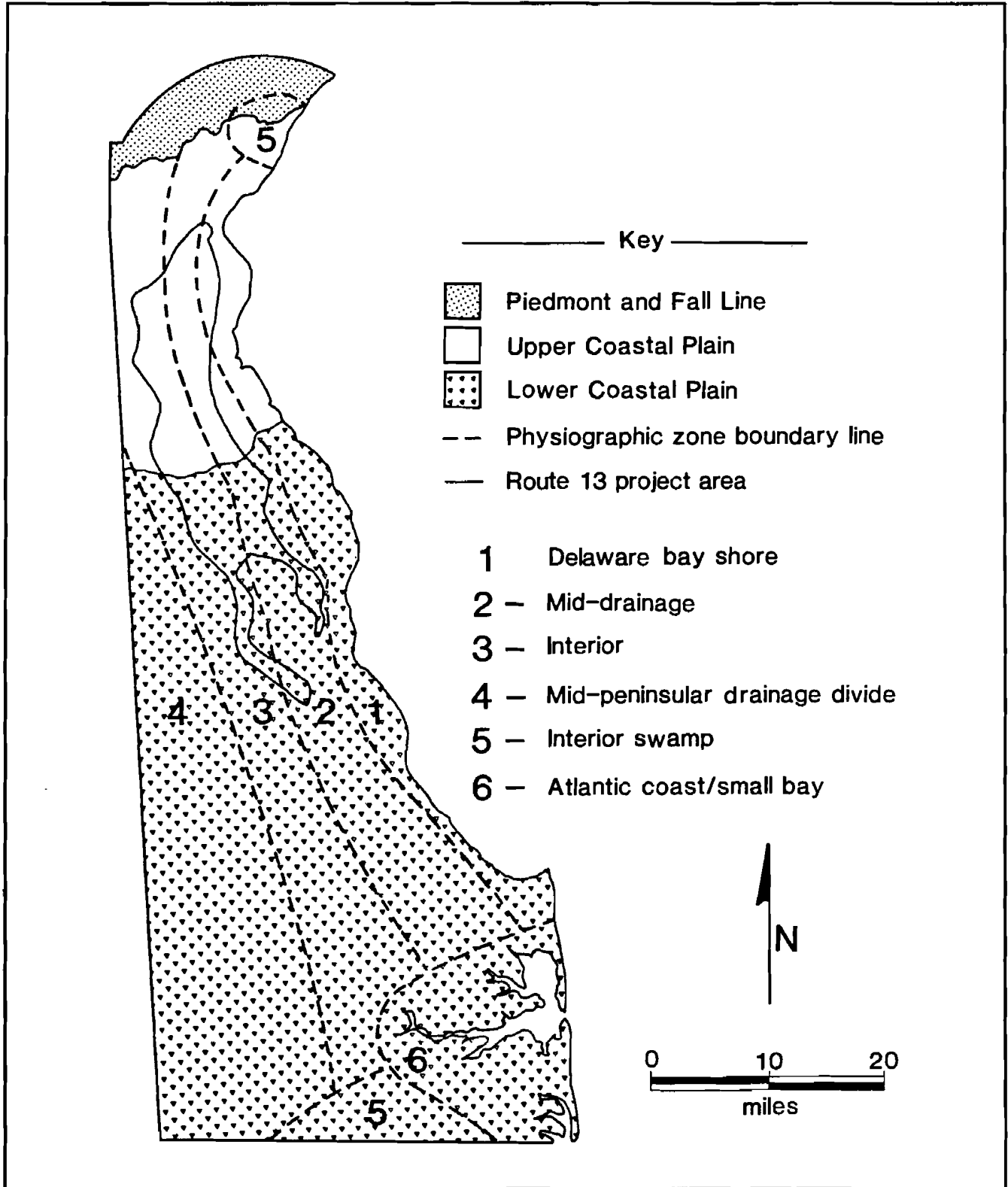
INTRODUCTION

The purpose of this report is to describe the Phase I archaeological survey of the Early Action Segment of the U.S. 13 Relief Route (Figure 1) from the Dover Air Force Base in Kent County to Duck Creek Road (New Castle 486) in New Castle County, Delaware. This segment includes 17.0 miles (27.2 km) of right-of-way (ROW) and is designed to provide relief for various critical traffic problems in the Dover and Smyrna areas. The survey was conducted between May, 1987 and March, 1988 by the University of Delaware Center for Archaeological Research (UDCAR) for the Delaware Department of Transportation and the Federal Highway Administration under section 106 of the National Historic Preservation Act. The goal was to locate and identify archaeological sites which would be affected by the proposed Relief Route. At the conclusion of the fieldwork, a total of 55 prehistoric and historic archaeological sites and site clusters (groups of closely spaced prehistoric sites which may be actually one site) had been identified within the 17.0 mile stretch of proposed right-of-way and Phase II cultural resource investigations had been recommended for all of them.

ENVIRONMENTAL SETTING

The Early Action Segment of the U.S. 13 Relief Route is located primarily in Kent County (Figure 2) within the Low Coastal Plain physiographic province (Figure 3). The Low Coastal Plain is underlain by the sand deposits of the Columbia Formation (Jordan 1964:40) and reworking of these sediments has produced a relatively flat and featureless landscape. Elevation differences

FIGURE 3
Physiographic Zones



range up to 30 feet (10 meters) and these small differences are moderated by long gradual slopes. These differences are, nonetheless, sufficient to cause differential distributions of plant and animal species. Watercourses are tidal and brackish along their middle and lower reaches with extensive fringing marshes increasingly prevalent moving downstream along their lower reaches.

The Early Action Segment of the Relief Route crosses several major east-flowing streams in Kent County, including Muddy Branch, Little River, Leipsic River, Mill Creek, and Duck Creek. All drain to Delaware Bay and the latter three show sizeable tidal movement at the point where the proposed roadway will cross. Several named and unnamed low order tributaries to these streams are also traversed. Swamps in low-lying and poorly drained areas are found primarily in the southern part of the project area and are most common between Lafferty Lane and Kent 345.

A variety of soils are present in the project area. The 24 individual soil series present can be grouped into primarily the Sassafras-Fallsington and Othello-Matapeake-Mattapex associations (Matthews and Lavoie 1970). The upper elevations of the project area are more commonly composed of orange-brown, orange, and yellow-brown moderately- to well-drained Sassafras sands, sandy silts, and silty loams, while the lower elevation areas are comprised of gray and buff moderately- to poorly-drained Fallsington and Othello clayey sands, sandy clays, and silty clays which support mixed hydrophytic plant species. The soil types are distributed through the project area in a complex

mosaic of well-drained and poorly-drained settings. The locations at the interface of well-drained and poorly-drained soils are favorable locations for prehistoric sites and there are many such locations in the project area.

PRESENT DAY/MODERN ENVIRONMENTAL SETTING

Since the arrival of Europeans and the colonization of the region, land use in the project area has been primarily agricultural. Dispersed farmsteads ranging in size from 100 to 800 acres were initially established in the early eighteenth century; however, over the years local farms have been slowly decreasing in size. Historically, the population of the project area was involved in agriculture and its supporting occupations, such as milling and blacksmithing. Since the early 1960s, portions of the project area have been drastically altered at an increasingly rapid rate through commercial, industrial, and, especially, residential development. Development in other areas has been slight. The cultural resources of the developing portions of the project area have been significantly disturbed by new or recent construction. Other portions of the project area have not been significantly altered.

REGIONAL PREHISTORY

This summary of the regional prehistory is abstracted from Custer (1984a). The prehistoric archaeological record of the Delaware Coastal Plain can be divided into four large blocks of time: The Paleo-Indian Period (c.a. 12,000 B.C. - 6500 B.C.), the Archaic Period (6500 B.C. - 3000 B.C.), the Woodland I Period

(3000 B.C. - A.D. 1000), and the Woodland II Period (A.D. 1000 - A.D. 1650). A fifth time period, the Contact Period, from A.D. 1650 to A.D. 1750, marks the final phase of occupation by Native American groups of Delaware in anything resembling their pre-European Contact form. Each of these periods is described below.

Paleo-Indian Period (12,000 B.C. - 6500 B.C.) - The Paleo-Indian Period encompasses both the final retreat of Pleistocene glacial conditions from Eastern North America and the subsequent establishment of more modern Holocene environments. The distinctive feature of the Paleo-Indian Period is an adaptation to the cold, and alternately wet and dry, conditions at the end of the Pleistocene and the beginning of the Holocene. Paleo-Indians relied on a hunting and gathering adaptation in which animal food resources comprised a major portion of the diet. Hunted animals may have included now-extinct megafauna and moose. A mosaic of deciduous, boreal, and grassland environments would have provided a large number of productive habitats for these game animals in northern Delaware and watering areas would have been particularly good hunting settings.

Tool kits of Paleo-Indian groups were oriented toward the procurement and processing of hunted animal resources. A preference for high quality lithic materials is apparent in the flaked stone tool kits and careful resharpening and maintenance of tools was common. A mobile lifestyle in which groups focussed on game-attractive environments is hypothesized with a social organization consisting of single and multiple family bands. Throughout the 5500 year time span of the period, this basic adaptation remains essentially uniform, although some adjustments

occur with the appearance of Holocene conditions in the latter part of the Paleo-Indian Period.

Numerous Paleo-Indian point finds are noted for Central Delaware, although all are surface find spots which shed little light on Paleo-Indian lifeways on the Delmarva. These finds are usually made on well-drained knolls adjacent to poorly-drained areas. The Hughes Paleo-Indian Complex (sites 7K-E-10, 7K-E-24, and 7K-E-33), to the west of the project area, produced several varieties of fluted and notched points from well-drained sites adjacent to a number of different types of swampy settings (Custer 1984a:58). Also in Central Delaware, it is hypothesized that bay/basin features may have attracted Paleo-Indian sites (Custer et al. 1983), although no clear associations have been demonstrated.

Archaic Period (6500 B.C. - 3000 B.C.) - The Archaic Period is characterized by an adaptation to the fully-emerged Holocene environments of Delaware. Mesic forests of oak and hemlock were predominant, while the accompanying reduction of grasslands in the face of warm and wet conditions caused the extinction of many of the grazing animals hunted during Paleo-Indian times, although browsing species such as deer flourished. Sea level rise is also associated with the beginning of the Holocene in Central Delaware, whose major effect would have been to raise the local water table, thereby creating a number of large interior swamps. Adaptations shifted from the hunting focus of the Paleo-Indian Period to a generalized foraging pattern in which plant food resources played a more prominent role. Swamp settings,

such as at Churchman's Marsh in northern Delaware, supported large base camps, as indicated by remains at the Clyde Farm site. A number of small procurement sites in favorable hunting and gathering locales are known from central and southern Delaware.

With the addition of plant processing tools such as grinding stones, mortars, and pestles, Archaic tool kits were more generalized than those of Paleo-Indian groups. A mobile lifestyle was still common, with a wide range of resources and environmental settings utilized on a seasonal basis. A shifting band level of organization which saw the waxing and waning of group size in response to seasonal resource availability is evident.

Woodland I Period (3000 B.C. - A.D. 1000) - The Woodland I Period coincides with dramatic local climatic and environmental shifts that seem to be part of larger scale changes occurring throughout the Middle Atlantic region at this time. Pronounced warm and dry conditions set in, lasting from 3000 B.C. to 1000 B.C. Mesic forests were replaced by xeric forests of oak and hickory, and grasslands again became common. Some interior streams dried up, but the overall effect of these changes was an alteration of the environment, not a degradation. Continued sea level rise at a reduced rate made many areas of the Delaware River and Bay shore the locations of large brackish water marshes which were especially high in productivity.

These changes in environment and resource distributions brought about a radical shift in adaptations for prehistoric groups. Important areas for settlements include the major river floodplains and estuarine swamp/marsh areas. Large base camps

are evident at several settings in Central Delaware, such as at the Barker's Landing, Coverdale, Hell Island, and Robbins Farm sites. These sites seem to have been occupied by larger groups than Archaic base camp sites and may have been the loci of year-round habitations. The overall tendency in this Period is toward a more sedentary lifestyle.

Woodland I tool kits show some minor variations as well as some major additions from previous Archaic tool kits. Plant processing tools become increasingly common, indicating intensive harvesting of wild plant foods that may have approached the efficiency of agriculture by the end of the Woodland I Period. Chipped stone tool assemblages changed little from the preceding Archaic Period, save for the introduction of broad-blade, knife-like processing tools. The addition of stone, and then ceramic, vessels is also seen. These items enabled more efficient cooking of certain foods and may also have functioned as storage containers for surplus plant foods. Storage pits and house features are also known for Northern Delaware during this period from sites such as Clyde Farm and Delaware Park.

Social organizations also seem to have undergone radical changes during this period. With the onset of relatively sedentary lifestyles and intensified plant harvesting which might have yielded occasional surpluses, incipient ranked societies may have developed. Potential indicators of this include extensive trade and exchange in lithic materials for tools as well as non-utilitarian artifacts, and caching of special artifact forms.

Woodland II Period (A.D. 1000 - A.D. 1650) - In many areas of the Middle Atlantic, the Woodland II Period is marked by the appearance of agricultural food production systems; however, Woodland I settlements, especially the large base camps, were in many instances also occupied during the Woodland II Period, with very few changes in basic lifestyles and overall artifact assemblages indicated (Stewart, Hummer and Custer 1986). Intensive plant utilization and hunting remained the basic subsistence activities up to European Contact. Similarly, no major changes are seen in social organization for the Period in Central Delaware.

Contact Period (A.D. 1650 - A.D. 1750) - The Contact Period begins with the arrival of the first substantial number of Europeans in Delaware. The Period remains enigmatic for Delaware due to the paucity of known archaeological sites that clearly date to this time. Site 7NC-E-42 in northern New Castle County is the only Contact component yet investigated in the State (Custer and Watson 1985). Its small size, impoverished assemblage of European goods, and the persistence of aboriginal lithic technology indicated at the site contrasts with the much larger Contact manifestations known from neighboring southeastern Pennsylvania and elsewhere. These findings support the belief that Native American groups in Delaware interacted little with European groups at this time, and were under virtual domination of the Susquehannock Indians of southern Lancaster County, Pennsylvania. The Contact Period ends with the virtual extinction of Native American lifeways throughout the Middle

Atlantic region, save for a few remnant groups.

REGIONAL HISTORY

This short historical overview is abstracted from Munroe (1978, 1984), Hoffecker (1973, 1977), Weslager (1961, 1967), Lemon (1972), Hancock (1932, 1947, 1976), Hudson (1969), Scharf (1888), and Bausman (1940, 1941). A more detailed historical overview of the general Route 13 Corridor is provided in the Phase I/II research plan (Custer, Bachman, and Grettler 1987).

The earliest colonial settlement in Delaware known as Swanendael ("valley of swans") was made at present Lewes in 1631 under the sponsorship of patroons of the Dutch West India Company for the purpose of whaling and raising grain and tobacco. This venture was privately financed, but it ended in tragedy as the all-male population was massacred by the local Indians in 1632. Farther north a group of Swedes in the employ of the New Sweden Company built Fort Christina in 1638 in what is now part of the present city of Wilmington establishing the first permanent European settlement in Delaware. The Swedish government supported the venture, and Fort Christina became the nucleus of a scattered settlement of Swedish and Finnish farmers known as New Sweden. Within a few years this Swedish settlement included a fort, church, and small farming community.

The Dutch claimed the identical land -- from the Schuylkill River south -- by right of prior discovery, and in 1651 the West India Company retaliated by building Fort Casimir at New Castle in an attempt to block Swedish efforts to control commerce in the Delaware River. The Swedes captured this fort in 1654 and

renamed it Fort Trinity. Rivalry between Swedes and Dutch continued, and the Dutch recaptured Fort Trinity in 1655, and also seized Fort Christina. As a result New Sweden went out of existence as a political entity due to lack of support from the homeland although the Swedish families continued to observe their own customs and religion.

In 1657 as a result of peaceful negotiations the city of Amsterdam acquired Fort Casimir from the West India Company, and founded a town in the environs of the fort called New Amstel. This was a unique situation in American colonial history -- a European city became responsible for the governance of an American colony. A small fort was also erected at Lewis in 1659 for the purpose of blocking English intrusion, and a few settlers built homes there including 41 Dutch Mennonites who established a semi-socialistic community in July of 1663. They, too, were under the supervision of local officials appointed by the burgomasters of Amsterdam.

English hegemony of the region began in 1664 when Sir Robert Carr attacked the Dutch settlement at New Amstel on behalf of James Stuart, Duke of York, brother to Charles II. This attack was an important move on England's part to secure her economic position in the New World. New Amstel, renamed New Castle, was sacked by English soldiers and sailors, who plundered the town, and English officers confiscated property, livestock, as well as the personal property and real estate owned by the local Dutch officials. A transfer of political authority from Dutch to English then followed, and the Dutch settlers who swore allegiance to the English were allowed to retain their lands and

personal properties with all the rights of Englishmen. Former Dutch magistrates continued in office under English authority, and Swedes, Finns, and Dutch alike peacefully accepted the rule of the Duke of York through his appointed governors.

In 1671 the Duke of York made the first land grants in the area of present Kent County. By 1679, 53 grants had been made. With water transportation the major mode of travel and commerce in the late seventeenth century, most of the lands granted in Delaware had frontage on a navigable stream or waterway. In Kent County, twenty-one of the 53 grants made by 1679 were along the St. Jones River.

Overland travel was extremely difficult in the region throughout the seventeenth and eighteenth centuries with heavily wooded and marshy areas constituting major obstacles. The sparseness of the population and corresponding lack of accommodations for travelers added to the discomfort and dangers of overland transportation. In 1680, people living in the upper part of Kent County, then part of Whorekill County, petitioned Governor Andros to create a new, smaller county to be called St. Jones County. In 1682, William Penn was granted proprietary rights over Pennsylvania and the Lower Three Counties which included all of modern Delaware. Relations with Pennsylvania deteriorated and boundary conflicts soon developed in St. Jones County, renamed Kent by 1683. The border with New Castle County was Duck (Smyrna) Creek, but as the creek did not extend very far to the west, the western part of the boundary was left undefined. Even more significant were rival claims by the

Calverts in Maryland. The Delaware-Maryland border, particularly along northern Kent County, was hotly disputed until it was permanently fixed in 1765.

Waterways were important to transportation and commerce as early roads were limited in number and of poor condition. The few existing roads led to landings on rivers and the Delaware Bay where produce and goods were shipped by cheaper, and more efficient, water transport. The Delaware River and Bay served as a major focus of water transportation because the majority of Delaware's streams flow eastward to these bodies. For this reason the large port city of Philadelphia, and to a lesser extent Wilmington and New Castle, exerted major commercial influence on the Delaware counties throughout the eighteenth century and later. Wilmington, New Castle, and Lewes were also ports for ocean-going vessels involved in export trade. Overland transport was limited to a few major roads, such as the eighteenth century post road connecting Philadelphia-Wilmington-New Castle-Odessa-Middletown-Dover-Lewes with a western branch at Milford linking it to the Chesapeake Bay. Small secondary roads and paths interconnected numerous villages and hamlets and were relatively common within the study area.

One reason for the relatively slow growth of Kent County beyond the St. Jones River drainage was a lack of any extensive network of navigable streams or good roads in the western part of Kent County. Land north and west of the navigable portions of Duck, St. Jones, Little and Murderkill Creeks, were more sparsely populated than other areas in Kent County because of the importance of water transportation in the

cheap movement of bulky agricultural products.

In an attempt to improve the roads in the Lower Counties, the General Assembly in 1752 and again in 1761 called for the construction of a "King's Road" between the New Castle-Kent County border and Lewes. This road was to be 40 feet wide with all but ten feet cleared. Secondary roads of 30 feet in width and all but ten feet cleared were also to be constructed. From Salisbury (just north of present day Smyrna and later known as Duck Creek Village) along the New Castle-Kent County border, the post road continued south through Dover, Camden, Milford and Frederica, eventually to reach Lewes and the Maryland border (Laws of the State of Delaware 1797:320, 390-394).

By the middle of the eighteenth century, population increases and commercial expansion stimulated the growth of towns and the development of transportation and industry. Dover and Smyrna emerged as the two largest towns in Kent County, with markets, landings, and central locations attracting new settlers. The population of Kent County in the study area grew through both natural increase and the continued movement of new peoples into the area from Maryland, Pennsylvania, the other two counties of Delaware, and from Europe, particularly Great Britain. A census taken privately in 1760 gave the population of Kent County as 7,000 individuals (Conrad 1908:580).

The median size of land warrants granted in 1735 in Kent and New Castle counties was between 200 and 300 acres, with the typical grant close to 200 acres (Penna. Archives 1891:193-202). Larger grants, however, were not uncommon. If New Castle County

and southeastern Pennsylvania can be used as a rough comparison, the density of rural settlement in northern Kent County was approximately 5 households per square mile (Ball 1976:628).

Throughout the late eighteenth and nineteenth centuries, the agrarian Delmarva peninsula was considered an area of production and transshipment between the Chesapeake Bay markets (Annapolis and Baltimore) and the Delaware River and Bay markets (Philadelphia and New York). As local markets prospered, so too did the hamlets and other unplanned towns that had sprung up at crossroads and around taverns, mills, and landings. Important landings included the Brick Store, Hay Point, and Short landings along the Smyrna River; Dona, Naudain, and White Hall landings along the Leipsic River; and Lebanon, Forest, and White House landings along the St. Jones. Landings, as well as towns and hamlets in the study area, formed, grew, and sometimes declined according to local and regional economic conditions.

Throughout Delaware's agricultural history farm labor has been a valued commodity. In the colonial period blacks in slavery and white indentured servants were the primary farm laborers. By the mid-eighteenth century, white indentured servants were as numerous as black slaves. Slightly less than one-half of the blacks in the state in 1790 were free; however, by 1810, less than one-quarter of blacks were slaves according to federal censuses. Free black labor played an increasing role in farm production in Delaware as ethical and economic factors reduced the profitability of slavery prior to the Civil War. After Emancipation, black labor continued to be a significant factor in farm production.

According to the 1810 national census, the population of Kent County was 20,495 persons. Marginal farm lands were being increasingly settled as good, well-drained lands with access to markets were becoming more scarce. The move inland from navigable waterways apparent by the late eighteenth century began with the influx of new populations, particularly from England. This period of growth from the late eighteenth to early nineteenth centuries, however, was short lived with the population of Kent County actually decreasing in the late 1810s to the 1830s. By 1840 the population of Kent County, according to the national census, had declined to 19,872 persons. Given the natural increase of the people that remained in Kent County during this period, the number of people leaving and "passing through" the County is even greater. The rapid population growth of the first decades of the nineteenth century in Delaware also forced many farmers off the land. Competition for prime land forced many new farmers to clear and till land of poor or marginal quality. Many of these farmers were then hard pressed to turn a profit from their farmsteads and thus became part of the outward migration from Delaware.

A decline in wheat prices and increased competition for good land was accompanied by a significant decrease in the fertility of agricultural lands throughout the state. Poor farming methods, erosion, and simply exhausted land contributed to the economic woes of Delaware farmers. Increased opportunities in urban areas and the West also served to draw people from Delaware, and Kent County in particular. As more and more people

left Delaware, the resulting labor shortage made the cultivation of marginal and exhausted lands even less profitable. Thus, even more people moved away from Kent County.

The economic crises of the first decades of the nineteenth century helped to spur the beginning of an agricultural revolution throughout Delaware. The first agricultural improvement society in Kent County was formed in 1835. The discovery of marl, a natural fertilizer, during the construction of the Chesapeake and Delaware Canal in the 1820s enhanced the productivity of Delaware agriculture. The opening of the canal in 1829 further encouraged the production of market-oriented crops by providing for the more efficient transportation of perishable goods. The opening of the Philadelphia, Wilmington and Baltimore Railroad in 1839 complemented existing water-based transportation systems and provided transportation of northern Delaware produce to the growing eastern markets. When the Delaware Line extended rail service to Dover, and later Seaford, in the 1850s, a vast agricultural hinterland was opened and agricultural production for markets increased significantly.

Prior to 1832, Delaware's agricultural products were primarily grains. Fruit and vegetable crops were of lesser importance. Nonetheless, from the 1830s to the 1870s, Delaware was the center for peach production in the eastern United States. Rich soil, favorable climate and rainfall, excellent transportation facilities, and strategic location near large markets made peach production a lucrative enterprise. The peach industry was hindered in Kent and Sussex counties until the 1850s due to transportation limitations. Early attempts there failed

because producers could not move fruit to market economically. Rail service into the area and the absence of the peach blight in the southern counties made peaches profitable into the 1870s. By the end of the "peach boom," massive harvests were being shipped by rail and steamship lines to New York where the produce was readied for resale to the northern states. The spread of a disease known as the "Yellows" devastated orchards throughout the state and brought an end to the boom. However, until the peach blight curtailed production, the peach industry proved profitable for a large number of peach growers, as well as a variety of support industries.

Throughout the nineteenth century, and into the twentieth, agriculture in Delaware continued to focus on perishable products with a decrease in staples. More diverse crops, including tomatoes, apples, potatoes, and truck produce became more common in response to the demands of markets in New York, Philadelphia, Baltimore, and other cities. The number of acres cultivated in Kent County rose from approximately 283,000 acres in 1850 to 338,000 acres by 1900. Poultry and dairy production also increased significantly in this period in Delaware, particularly in Kent and Sussex counties. Concurrent with the rise in importance of truck crops and dairy products in the late nineteenth century was the improvement of transportation throughout the state. The completion of the Delaware Railroad trunkline through to Seaford in 1856 encouraged the production of such goods by providing quick and cheap access to regional markets. Prior to the Delaware Railroad, steamboats and other

water craft provided areas of Kent County with cheap and efficient transportation.

Tenant farming, which had been common in the eighteenth century, became even more prevalent in the nineteenth century. Large land owners, having acquired much of their holdings during the hard times of the 1820s and 1830s, leased their land to tenants. Most of the land owners and tenants were white, although a number of tenants and farm laborers, particularly in Kent and Sussex counties, were black. By 1900 over 50% of all farmers in Delaware were tenants or share croppers. Sites associated with agricultural tenancy comprise a significant number of the historic archaeological and standing structure resources identified along the southern Route 13 Corridor. Tenancy remained a dominant farming practice into the twentieth century, with almost 50% of the farmers in Kent County being tenants in 1925.

The agricultural trends identified in the late nineteenth century continued relatively unchanged well into the twentieth century. Corn and wheat declined in importance due to competition from the western states. By 1880 alfalfa, legumes, and truck crops were increasing in importance and by the mid-twentieth century, had become more profitable than wheat. Dover was still the largest city in Kent County, although smaller than Wilmington and Newark.

The late nineteenth and early twentieth centuries also saw the increasing commercialization of southern New Castle and Kent counties. Light manufacturing, including carriage making and cabinet making, and foodstuff processing, including canning and

juice/syrup production, became an important part of the Delaware economy. Smyrna and Dover were the sites of most of this commercial and manufacturing activity, although other areas including Camden-Wyoming and Frederica were involved.

The late nineteenth century also saw the continued growth of different ethnic communities in Kent County, particularly of Amish and Mennonites in the area west of Dover and of "Moors" in the Cheswold area. A number of prosperous Amish and Mennonite farms still exist near Fork Branch. The "Moors" of Delaware are a group of people who claim a common descent from a number of Black, Indian, and European ancestors. Until the early twentieth century, the Moors maintained their own schools and in World War I and II insisted on being listed as a separate race. As with the Amish and Mennonites, the Moor community exists today.

The patterning and density of settlement in Delaware, and the study area specifically, have been strongly influenced by several factors throughout its history: 1) an agrarian economy; 2) the commodity demands of large markets, first Europe and the West Indies, and later domestic commercial-industrial centers, and 3) transportation facilities. The completion of the Dupont Highway in 1923 linked the northern and southern sections of the state and helped to complete the shift in agricultural production towards non-local markets and open new areas to productive agriculture. Improved transportation in the twentieth century also brought a decline in the importance of the many small crossroad and "corner" communities that had sprung up in the late eighteenth and nineteenth centuries.