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# Building a Framework for Research: Delaware's Management Plan for Historical Archaeological Resources

## **Cover Page Footnote**

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## BUILDING A FRAMEWORK FOR RESEARCH: DELAWARE'S MANAGEMENT PLAN FOR HISTORICAL ARCHAEOLOGICAL RESOURCES

Lu Ann De Cunzo and Wade P. Catts

*In 1990 the authors completed a Management Plan for Delaware's Historical Archaeological Resources. This article outlines the Management Plan's objectives and components, and presents the core of the research program for historical archaeology developed in the Plan. The Delaware Plan may suggest ideas to historical archaeologists developing plans for other states, provinces, counties, and even cities or other municipalities. At the same time, Delaware historical archaeology can benefit from the responses to this Plan offered by our colleagues across the Northeast and beyond.*

*En 1990, les auteurs ont établi un Plan de gestion des ressources archéologiques historiques du Delaware. L'article indique les objectifs et les éléments du Plan et présente l'essentiel du programme de recherches en archéologie historique qu'il comprend. Le Plan du Delaware peut apporter des idées aux archéologues qui ont à préparer de tels documents pour d'autres États, des provinces, des comtés et même des villes ou autres municipalités. D'autre part, l'archéologie historique du Delaware peut bénéficier des commentaires relatifs au Plan provenant de nos collègues du Nord-Est et d'ailleurs.*

### Introduction

In the United States, the federal historic preservation program has enumerated a set of basic goals (National Park Service 1983). They guide the historic preservation planning process in each state, and consist of: 1) identifying the state's cultural resources; 2) establishing criteria by which to determine the significance of the resources; 3) applying the criteria in evaluating identified resources; and 4) developing means to assure preservation of significant resources and/or the significant information contained therein (Ames et al. 1989: 1). This planning process is closely tied to the National Register of Historic Places created by the National Historic Preservation Act of 1966.

The historic context forms the "cornerstone of historic preservation planning" (Ames et al. 1989: 20). The historic context framework of time, space, and research themes provides a mechanism for evaluating historic resources in relation to broader cultural and historical patterns (Ames et al. 1989: 20; National Park Service 1983). It allows consideration of the relationships between archaeological and other historic resources. At the same time, it pro-

vides integration and synthesis of disparate studies undertaken across each state, spanning over three centuries, and addressing innumerable topics from several theoretical and methodological perspectives.

In Management Plans in each state, then, a historic context framework is developed, and strategic plans presented for meeting the historic preservation program goals. Built on the historic context framework, these strategic plans are, by definition, oriented toward research as the basis of management.

Over the past several years, the State Historic Preservation Office in Delaware has sponsored preparation of a series of Management Plans. The first, in 1986, was *A Management Plan for Delaware's Prehistoric Cultural Resources* (Custer 1986). Three years later, the *Delaware Comprehensive Historic Preservation Plan* was completed (Ames et al. 1989). It principally addresses the state's surviving historic architecture and landscapes and only touches on researching and preserving Delaware's historical archaeological resources. Archaeological resource management and preservation plans prepared for Wilmington and New Castle (Goodwin 1986;

Table 1. Historic context framework for historical archaeological resources in Delaware.

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TEMPORAL PERIODS

1630-1730+/-	Exploration and Frontier Settlement
1730-1770+/-	Intensified and Durable Occupation
1770-1830+/-	Early Industrialization
1830-1880+/-	Industrialization and Early Urbanization
1880-1940+/-	Urbanization and Early Suburbanization

GEOGRAPHICAL ZONES

Piedmont  
Upper Peninsula  
Lower Peninsula  
Coastal

RESEARCH DOMAINS

Domestic Economy  
Landscape  
Manufacturing and Trade  
Social Group Identity, Behavior, and Interaction

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Sources: Ames et al. 1989; De Cunzo and Catts 1990.

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Heite and Heite 1989) established frameworks and priorities for the cultural resource management projects undertaken in those cities, but no statewide plan existed to guide management of Delaware's archaeological resources of the historic period. In 1989 the State Historic Preservation Office (then the Bureau of Archaeology and Historic Preservation) awarded a Survey and Planning Grant to the University of Delaware Center for Archaeological Research to support preparation of a historical archaeological resources management plan. Monies from the National Park Service's Historic Preservation Fund, sub-granted to the state of Delaware, thus partly funded the plan. The University of Delaware and the Center for Archaeological Research provided matching funds. The *Management Plan for Delaware's Historical Archaeological Resources* (De Cunzo and Catts 1990) was completed and accepted by the State Historic Preservation Office in 1990.

The 1989 *Comprehensive Plan* presented a preliminary historic context framework for

Delaware. All the state's cultural resources dating to the historic period (defined as beginning with the first permanent European settlement, in the first third of the 17th century, in what was to become the state of Delaware) are to be evaluated with reference to this framework. The state is divided into five geographical regions, five temporal periods are utilized to organize the state's history, and 18 historic themes are identified (Ames et al. 1989: 1, 20-37; Herman and Siders 1989).

In the *Management Plan* for the state's historical archaeological resources, the historic context framework presented in the *Comprehensive Plan* was somewhat modified (TAB. 1). The temporal component of the framework was adopted unaltered. Geographically, the *Comprehensive Plan* divides the state into five zones: the Piedmont, the Upper Peninsula, the Lower Peninsula and Cypress Swamp, the Coastal, and the Urban (Wilmington). As Wilmington is treated in its own historical archaeological management plan (Goodwin 1986), only four geographic zones are distinguished in the *Management Plan* (FIG. 1).

The most significant modification is the conflation of the *Comprehensive Plan's* 18 historic themes into four research domains. The purpose was not to confound integration of the study and management of Delaware's historical archaeological and other historic resources. Rather, as pointed out in the *Comprehensive Plan*, flexibility is a key component of the historic context concept. Within the historic context framework, themes can be developed across time and space, chronological periods can be developed as individual contexts, or contexts can even be constructed from a combination of themes and chronological periods at a variety of geographical scales (Ames et al. 1989: 20).

For the *Management Plan's* purpose of providing general guidance in planning for, identifying, evaluating, registering, and treating Delaware's historical archaeological resources, the research domains both relate better to the trends and directions in historical archaeological research today and serve to link and interrelate the various themes. The *Comprehensive Plan* also points out that development of historic contexts should comprise one of the first elements of the preservation planning process (Ames et al. 1989: 7). No historic contexts have as yet been developed for

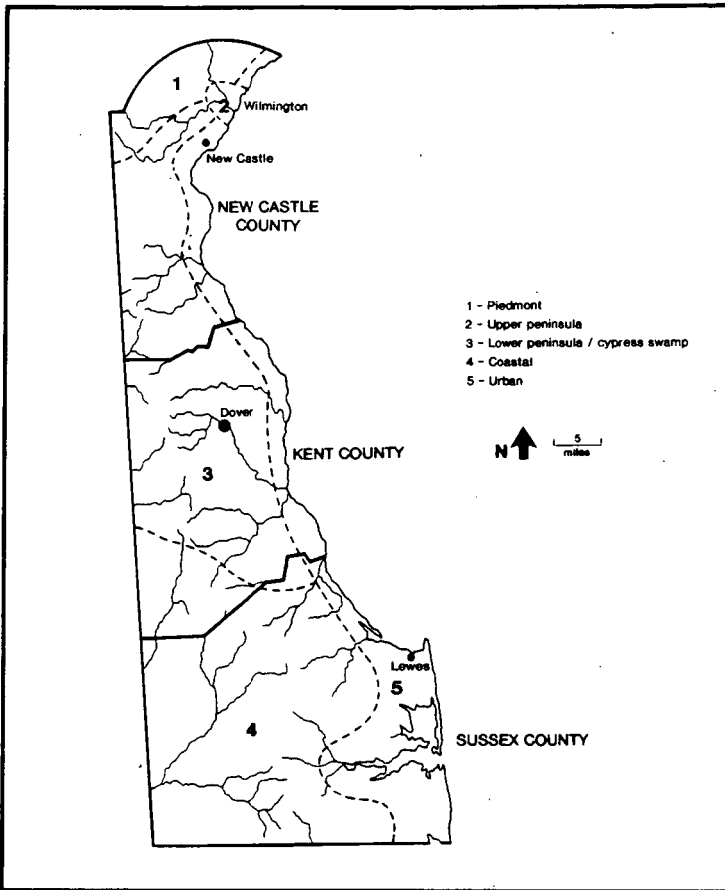


Figure 1. A map of Delaware showing the state's three counties, the principal urban settlements, and the geographical zones employed in the state's Historic Context framework. (Reproduced courtesy of the University of Delaware Center for Archaeological Research.)

Delaware's historical archaeological resources, nor was it the purpose of the *Management Plan* to do so. Rather, beginning to construct these contexts is an important component of what comes next in managing these resources.

With the historic context framework established as the *Management Plan's* basis, the following objectives remained:

- 1) Develop an overview of the physical, material correlates of Delaware history in order to define historic contexts with associated historical archaeological resources;
- 2) Identify Delaware's historical archaeo-

logical property types, their nature and distribution, and evaluate current knowledge of each;

- 3) Review the status of historical archaeological research (in Delaware and across the United States) and the research of other scholars studying the historic period in Delaware; this would aid in identifying those research themes, geographic areas, and time periods to which historical archaeological research can best contribute;

- 4) Elaborate research themes and questions proposed to guide historical archaeological research in Delaware for the next five years;

5) Prepare a five-year plan for historical archaeological research and preservation in Delaware by establishing and prioritizing goals for the following preservation activities: planning; identification; evaluation; registration; and treatment.

While it replicates neither, two other Management Plans especially inspired the Delaware *Management Plan*. The Historic Context for Historic Archaeology in Kentucky identified nine "cross-temporal topics" as research foci for historical archaeological research in the state: Consumerism; Settlement Patterns; Trade Networks; Foodways; Ethnicity; Archaeology of Households; Farmstead Archaeology; Urban Archaeology; and Industrial Archaeology (McBride and McBride 1989). The *Pinelands Cultural Resource Management Plan for Historic Period Sites* addresses all historic-period cultural resources in the New Jersey Pinelands. Nine "resource groups" form the basis of its organization: Agricultural Sites and Gristmills; Glasshouses; Iron Forges and Furnaces; Maritime Activities; Minor Industries; Sawmills; Settlements; Transportation Routes and Railroads; and Vernacular Residential Architecture. Research priorities and questions are identified for each "resource group." Resources' significance lie in their potential to address these research priorities and questions (New Jersey Pinelands Commission 1986).

A research plan comprising a series of research questions and issues outlined for each of the four research domains, for each time period, forms the core of Delaware's *Management Plan*. This structure was considered critical, as it linked the *Plan* with the process of evaluating the significance of archaeological resources. The National Register of Historic Places criterion of significance applied most frequently to archaeological resources is Criterion D. To be eligible for listing on the National Register under Criterion D, an archaeological resource must contain "information, or potential information, important to history or prehistory" (U.S. Congress 1966: Section 106). The research domains, issues, and questions thus provide the framework within which resources are evaluated for significance. Significant resources are those that provide researchers information relating to at least one of the research issues or questions. Delaware's *Management Plan* enu-

merates a few overarching research questions to integrate study of all of the state's historical archaeological resources. The remainder of the questions derive from the historic themes and archaeological research domains.

Each of the *Management Plan's* five objectives became a component of the final plan. To identify the trends and facets of Delaware cultural history relevant to historical archaeological research (Objective 1), those historical overviews already prepared as background for archaeological research in the state were first reviewed. These overviews were then supplemented through additional secondary research and reworked to fit more closely the temporal, geographic, and thematic historic context framework developed in the *Comprehensive Plan*.

Identifying historical archaeological property types (Objective 2) similarly built on previous historical, geographical, architectural, and archaeological research. Secondary research and the state's cultural resource files and archaeological and architectural survey and data recovery reports provided information on identified site types, their distribution and content. A data base of the state's inventoried historical archaeological sites was created and a revised categorization scheme for historical archaeological property types proposed.

Additional secondary research aided definition of the themes, time periods, and geographic regions to which historical archaeological research can best contribute in Delaware (Objectives 3 and 4). The literature of historians, architectural and landscape historians, decorative arts historians, scholars of folk culture, historians of technology, cultural geographers, and material culture scholars working in Delaware was surveyed. Review of their work emphasized their research approaches, themes and questions, the resources they study, and their substantive contributions. This research was coupled with a review of the themes, time periods, and geographic areas on which Delaware historical archaeologists have focused up to the present, and with a general review of the themes and interests current in the discipline of historical archaeology today.

Preparing a plan to manage Delaware's historical archaeological resources over the next five years (Objective 5) involved looking beyond the ideals of disciplinary research interests. Goals and needs were to be identified

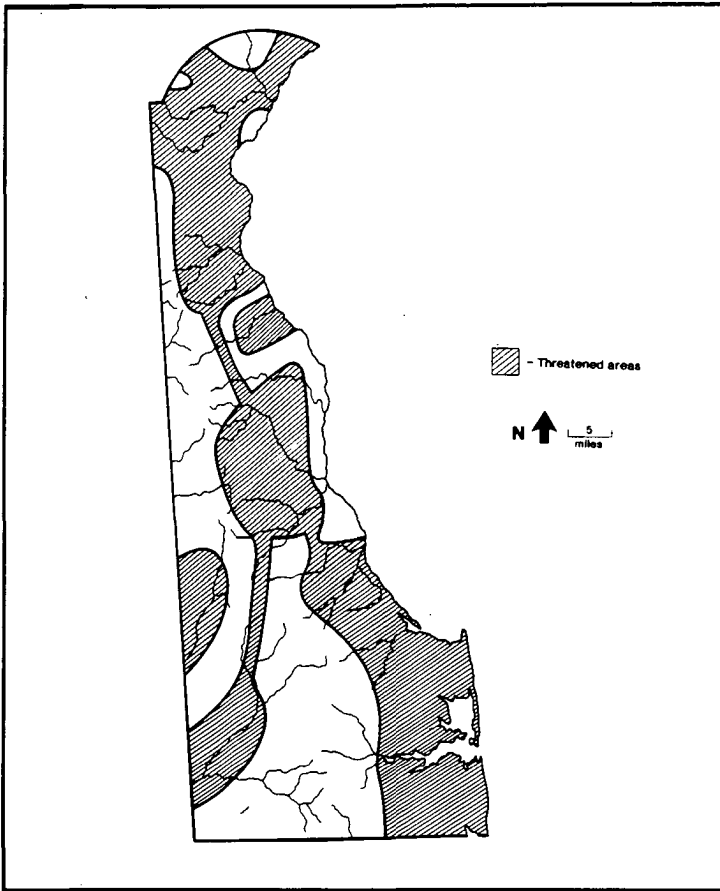


Figure 2. Portions of Delaware in which archaeological sites are currently subject to severe threats from erosion and development. (Redrawn from De Cunzo and Catts 1990: 183; reproduced courtesy of the University of Delaware Center for Archaeological Research.)

for each management activity composing the state's preservation program. This involved first identifying the nature and extent of historic settlement in Delaware during each study time period, thus defining the areas of potential historical archaeological site concentrations. Next the threats to the historical archaeological resource base were defined, and their geographic impact zones delineated (FIG. 2). Finally, general goals for the planning, identification, evaluation, registration, and treatment of Delaware's historical archaeological resources were identified and prioritized with an emphasis on the state's threatened resources.

### Research Contexts, Domains, and Questions in Delaware Historical Archaeology

Management of historical archaeological resources revolves around determining significance. As discussed above, this most often involves evaluating resources' potential contribution to our understanding of American history. Thus the components of the Delaware *Management Plan* deemed most broadly applicable to historical archaeologists working in other areas are the research domains and the research plan. The balance of this article first introduces the four research domains of the

*Management Plan's* historic context framework and then presents the core of the historical archaeological research plan. The latter consists of the proposed research questions and foci for each temporal-geographic-thematic/domain node of the historic context framework. Brief historical overviews introducing each temporal period provide a context for those unfamiliar with Delaware history. Historical archaeological sites currently being investigated within the plan's framework are identified for each time period. One, the John Darrach Store Site (De Cunzo et al. 1992), is presented in the next section as an example of the research plan's application.

The research questions generated for Delaware and presented below are of course not comprehensive, but are intended to guide planning, research, and decision-making in Delaware historical archaeology over the next five years. All are archaeological questions, rooted in the study of historical archaeological resources, yet not constrained by the requirement they be answered solely through archaeologically recovered data. Rather, numerous factors influenced their selection: 1) current research interests, approaches, and techniques in the field of historical archaeology; 2) current knowledge of Delaware cultural history—events, trends, economies, social organization, belief systems, lifestyles, etc.; 3) the state of historical archaeological research in Delaware—what we know and do not know, the property types that have been investigated and those that have not; 4) the current research interests and approaches of other scholars also investigating the historical period in Delaware—the goals here being to increase intersection of all our research, increase dialogue, and increase interdisciplinary research; and 5) the practical concern of using these questions to develop research designs and evaluate the significance of resources.

One obvious omission in the research plan requires explanation. Archaeological study of Delaware's Native Americans, including those resident at the time of and subsequent to European contact and settlement, is addressed in *A Management Plan for Delaware's Prehistoric Cultural Resources* (Custer 1986).

## Research Domains

### Domestic Economy

Historical archaeological investigations have focused over the years on the domestic residential site for several reasons. Domestic sites are ubiquitous, archaeologically visible, and in fact usually quite rich. More important, archaeologists, anthropologists, and historians have become increasingly cognizant of the centrality of the family/household as the basic social unit of production, reproduction, and consumption (cf. Beaudry 1984; Deetz 1982; Mrozowski 1984). Furthermore, the household represents the minimal social and economic unit generally visible archaeologically. Domestic economy studies form an essential basic component of both historical ethnographic research and investigations of the international capitalist system's development, the broadest subject of historical archaeological inquiry (Deagan 1988; Schuyler 1988; South 1988). Finally, domestic economy as a research domain interests historical archaeologists of all theoretical orientations.

Domestic economy encompasses the whole range of means (which include production, reproduction, and consumption) employed by the family/household to achieve its goals (Rapp 1979: 176). These goals may be mere survival and/or family continuity; they may include geographic, occupational, economic and/or social mobility; and they are inspired by religious beliefs and values and/or other ideologies. Thus, the family/household's production, reproduction, and consumption may be viewed as a strategy designed to achieve domestic goals, a strategy subject to historical archaeological investigation. Particular elements that historical archaeologists have explored include the household's composition and the roles of its individual members (cf. Deagan 1983; De Cunzo 1987; LeeDecker et al. 1987; Yentsch 1990), home production (of food, shelter, clothing, and other basic necessities as well as of marketable surplus products) (cf. Bowen 1988; Carlson 1990; Turnbaugh 1985; Yentsch 1988), and consumer behavior (see especially Spencer-Wood 1987). This last topic is intended to be broadly defined to encompass investigating the family/household's participation in a local production and barter economic system and/or in



a cash-based market economy. Relevant research issues include the family/household's investment in, use of, and improvements to land, buildings, tools and equipment, servants and slaves, livestock, and domestic furnishings. In addition, status/display goods and behaviors are subject to archaeological investigation—in particular the domestic landscape, architecture, consumer goods, and social behaviors such as entertaining in the home. Finally, the roles of fashion, style, and ideology in the domestic economy—including religious beliefs, world view, ideas on nature, beauty, the family, etc.—are also subject to examination.

Once the subject family/household's domestic goals and strategies have been reconstructed, analysis moves to a larger context. The family/household must be understood in the context of the local and regional economic, social, occupational, ethnic, religious, and political systems. Comparisons can be made across three major dimensions: time, space, and social position. For example, the extent of urbanization and industrialization, the nature, efficiency, and extent of the transportation system, and the nature of marketing systems and their effects on the availability of goods and services all vary over time. Spatial comparisons can be made within a single community, among similar and different communities within a geographic region, among rural, small town, and urban communities, and among different geographic regions. Comparisons across social position relate families/households of different ethnic affiliations, religious backgrounds, occupational structures, points in the life cycle, household types, income levels, and socioeconomic statuses. Thus, farm households and the households of rural, town-based, and urban laborers, craftspeople, merchants, professionals, and business-owners can all be investigated and compared by the archaeologist for evidence of similarities and differences in their domestic goals, strategies, and their material correlates. Developing sophisticated means of conducting this multivariate comparative analysis and interpretation remains one of historical archaeology's great challenges.

### **Manufacturing and Trade**

Historical archaeologists study manufacturing and trade principally through site types

other than residential sites, although overlap occurs in the areas of agriculture, home production, and consumer behavior. Several aspects of manufacturing can be explored by archaeologists at production sites. There is, of course, first the physical site—location and land use, alterations made to the landscape, architecture, and any other engineering and structural features (cf. Faulkner 1982; Hardesty 1988; Starbuck 1986).

Production processes have also proven amenable to archaeological study (cf. Faulkner 1986; Hardesty 1988; Honerkamp 1987; Light 1984; Pendery 1985; White 1980, 1981, 1983; Worrell 1985). The remains of tools and equipment, raw materials, and finished products are often preserved in the archaeological record. These, in conjunction with the physical site evidence, allow historical archaeologists to better understand technology and manufacturing processes and their evolution. Finally, all production sites serve also as workplaces. Therefore, archaeologists can explore work patterns, practices, and training programs; the behavior, activities, and life of the worker outside the domestic setting; and worker-employer relations—in other words, industrial ecology (cf. Beaudry 1989a, 1989b; Beaudry and Mrozowski 1987a, 1987b, 1988; Deetz 1963; Gorman, Jones, and Staneko 1985; Ingle 1982; Leary 1979; Levin 1985).

As with the study of domestic economy, the research program ends not with the individual site, but with cultural context and comparison. The site can be placed in a settlement context through study of the distribution and interrelationships among not only production sites but all the site types comprising the local and regional settlement and economic system (Langhorne 1976). At the same time, factors such as the ethnic and cultural background of the manufacturer can be considered as they relate to the process and technology employed at the site. Finally, the study of change across time and space encompasses not only investigating the evolution of process and technology at any individual site. The archaeologist also seeks explanations for changes in the worker's position as producer and consumer, and explanations for changes in the interrelationships among workers and their employers and among production, transportation, and marketing.

The research domain of trade links the study of production with the study of the do-

mestic economy. Site types required for the study of trade include transportation-related sites such as the ubiquitous Delaware river and creek landings, and distribution and redistribution sites such as storehouses, warehouses, and various merchants' shops and stores. Underwater resources also illuminate historical trading systems, the principal examples being shipwrecks and the remains of wharves and docks. Trade, however, implies both supply and demand. Domestic sites inform on what people did in fact acquire and from what sources. Ultimately the research goal is to reconstruct the structure, functioning, and evolution of Delaware's production, distribution, and consumption systems from the 17th through early 20th centuries.

### Landscape

Studying the cultural landscape involves looking at the human settlement system and its relationship to the natural environment. Analysis may proceed on a number of different levels, including national, regional, sub-regional, local, and site-specific. At all levels beyond the site-specific, research focuses on the physical manifestations and interrelationships among frontier (cf. Lewis 1984), rural (cf. Paynter 1982), town/nucleated (cf. Heite and Heite 1986a; Miller 1988), and urban settlement systems (cf. Cressey and Stephens 1982; Rothschild 1987; Wall 1987). At individual sites, archaeologists seek to reconstruct the natural and cultural environment (cf. Beaudry and Mrozowski 1987a, 1987b, 1989; Kelso and Beaudry 1990), the division and use of space (cf. Beaudry 1986; Pogue 1988; Stewart-Abernathy 1986), and to understand architectural forms and their placement (cf. Carson et al. 1981).

Clearly this research domain intersects the others identified in the *Management Plan*. At the domestic site, for example, the use and manipulation of the landscape can be explored as an aspect of the household's economic strategy as well as in its relationship to ethnic identity, religion, and political, social, economic, and occupational status and goals (cf. Adams 1990; Beaudry and Mrozowski 1987b; Epperson 1990; Leone 1973; Leone et al. 1989; Stewart-Abernathy 1986; Yentsch et al. 1987). Similarly, the cultural landscape of a production site results from the interaction of a com-

plex network of factors. Technology and the manufacturer's cultural/ethnic background, traditional knowledge, economic means, social status, and aspirations are all played out in the physical site. Furthermore, the manufacturer's views on his or her relationship to and responsibility for the workers, and his or her "world view" or beliefs concerning nature, human relationships to it and potential dominance over it all take material form in the cultural landscape (cf. Beaudry 1989a; Beaudry and Mrozowski 1988). Finally, as with the other research domains, the cultural landscape must be studied as a phenomenon exhibiting stability as well as undergoing change across time and space.

### Social Group Identity, Behavior, and Interaction

Archaeological study of social groups intersects with the other research domains, yet also requires investigating site types not identified with the other domains. Family and kinship, ethnic identity and behavior, religious beliefs and associations, community ties, and political, social, economic, and occupational groups may all be investigated to a certain extent at the level of the family/household residential site (cf. Deagan 1983; Faulkner and Faulkner 1987; Geismar 1982; Kelso 1984; Leone 1973; Leone et al. 1989; McGuire 1982; Orser 1990; Otto 1984; Praetzelis, Praetzelis, and Brown 1987; Reitz and Scarry 1985; Schuyler 1980; Singleton 1985; Spencer-Wood 1987; Staski 1987). Similarly, the social groupings associated with the workplace may be explored at the production or distribution site (cf. Deetz 1963). To reconstruct the entire social and cultural system, however, social behavior must be understood at places such as churches (cf. Riordan 1989), schools (cf. Catts and Cunningham 1986; Graffam 1982; Peña 1992), occupational, ethnic, and other social organization meeting halls (e.g., granges, lodge halls, and other clubhouses), political institutions (e.g., courthouses) (cf. Wise 1976), inns and taverns (cf. Coleman et al. 1990; King 1988; Rockman and Rothschild 1984; Wilkins and Quick 1976), military sites (e.g., battlefields, forts, and military shipwrecks) (cf. Albright 1987; Arnold 1978, 1989; Braley 1987; Carrell 1990; Cockrell 1979; Cummings 1980, 1983; Delgado 1988; Faulkner and Faulkner 1987;

Fisher 1983, 1986; Foster and Smith 1986; Fry 1984; Johnson 1985; Keith 1982; Miville-Deschenes 1987; Scott et al. 1989; South 1974; Sullivan 1986; Turnbaugh, Turnbaugh, and Davis 1979; Watts 1981; Watts et al. 1984), and even cemeteries (cf. Bachman and Catts 1990; Blakely and Beck 1982; Clark 1987; Deetz 1977; Deetz and Dethlefsen 1967; Parrington 1987).

Investigation of social group identity, behavior, and interaction can appropriately occur within the context of the community. Of course, one can define a community in many ways and at many demographic and geographical scales. Nevertheless, communities always comprise kin, household, religious, occupational, political, and social groups interacting within a defined geographic area. Interacting communities form larger political and cultural systems. Thus by utilizing this proposed framework, historical archaeologists in Delaware can contribute to the study of the family/household, the social group, the community, and ultimately the politico-cultural system.

## Research Contexts and Questions

The broadest, most transcendent questions proposed to guide historical archaeological research and resource preservation in Delaware are consonant with the goals of anthropological and historical research. These goals encompass not only the description of historical cultures and past life, but their explanation and interpretation as well. Their transcendence is temporal, spatial, and thematic. Cultural reconstruction and historical understanding cannot be achieved through research that never reaches beyond topical compartmentalization. Temporal and geographical comparisons are required to investigate stability and continuity, variability and change—the study of cultural process. The purpose of researching and preserving Delaware's historical archaeological resources is ultimately to generate sufficient data and answers to the more specific questions posed below so that synthetic, processual, and yet highly contextualized interpretations become possible.

### I. 1630–1730

Following an unsuccessful attempt in 1631

by the Dutch West India Company to establish a fishing and agricultural settlement at present-day Lewes, the New Sweden Company built Fort Christina, the first permanent European settlement in Delaware, in 1638. The fort, constructed with the support of the Swedish government, was located at the confluence of the Brandywine and Christiana Creeks in the Upper Peninsula, on the present site of the City of Wilmington. It became the nucleus of New Sweden, a scattered settlement of Swedish and Finnish farmers and traders (Weslager 1987).

The Dutch claimed the identical land, from the Schuylkill River south. In 1651 the West India Company built Fort Casimir at the present site of New Castle, in an attempt to block Swedish efforts to control commerce on the Delaware River. The Swedes responded by capturing this fort in 1654. Rivalry between the two colonizing governments continued. The Dutch returned to the Delaware Valley in 1655 with a large military force, recapturing Fort Casimir and also seizing Fort Christina (Dahlgren and Norman 1988). As a result, New Sweden ceased to exist as a political entity, although Swedish and Finnish families remained in the region.

In 1657, the City of Amsterdam acquired Fort Casimir from the West India Company, and founded New Amstel in the vicinity of the fort. Two years later, the Dutch erected a small fort at Lewes, near the mouth of the Delaware Bay, for the purpose of blocking English incursions. Of particular concern were settlers from the Chesapeake Bay and Virginia, since Lord Baltimore considered the lands between the Chesapeake Bay and the Delaware as part of his Proprietorship.

English hegemony of the Delaware River and Bay area began in 1664 with attacks on the Dutch settlements at New Amstel and Lewes. By 1671, 47 Dutch and English persons resided in the Lewes area (Gehring 1977: 100). The preceding year Lord Baltimore had created a new county encompassing much of the present state of Delaware (Papenfuss and Coale 1982: 11). Between 1670 and 1682, when William Penn became the Proprietor of these lands, Baltimore issued at least 45 warrants for lands on the west side of Delaware Bay. The granting of proprietary rights to William Penn and his representatives then transferred political and economic control of the Delaware region to Philadelphia

(Munroe 1978).

By 1683, only about 400 inhabitants—Swedish, Finnish, Dutch, and English settlers, and their African slaves—occupied the entire settled area from Cape Henlopen to New Castle (Fernow 1877: 522). Slaves may have accounted for as much as one-quarter of Delaware's population at this time (Essah 1985).

Historical archaeologists and geographers in the Middle Atlantic region (Blouet 1972; Custer et al. 1984: 102-113; Earle 1975; Fithian 1992; Miller 1988; Wise 1980) have reconstructed the settlement pattern for this early period as consisting of dispersed farmsteads located along the Delaware and its tributaries, where the land possessed good agricultural qualities. Farmers sited their farmsteads in close proximity to waterways and creeks, with small clearings for fields and building sites.

The early Swedish, Finnish, Dutch, and English farmers principally grew tobacco, rye, and barley. By the end of the 17th century, the Delaware counties had been integrated, although to differing extents, into Philadelphia's agricultural and commercial hinterland (Lindstrom 1978; Walzer 1972). Many northern and central Delaware farmers especially shifted from a subsistence-oriented to market-oriented agriculture (Hanna 1917; Hoffecker 1977; Loehr 1952; Pursell 1958). These farmers grew wheat, shipping their crops by water to local milling sites. Flour and bread were then shipped to Philadelphia for export to the West Indies, other North American colonies, and southern European countries. Seventeenth- and early 18th-century Delaware farmers also raised hogs and cattle. Cattle provided an especially significant source of income for the settlers of the Lower Peninsula (Jordan 1914; Munroe 1978: 198).

English settlers also exported lumber from the three lower counties. Timber products were important exports from the Lower Peninsula, particularly in the coastal region of Sussex County. Here forestry exports formed a mainstay of the economy throughout the 17th and 18th centuries, until the American Revolution disrupted the trade (Clemens 1980; Davidson 1982).

The port towns of Philadelphia, New Castle, and Lewes served as the major commercial and social centers by the end of the 17th century. Scattered small hamlets contained a

few dwellings and service-oriented structures (blacksmith shops, taverns, stores). They virtually all bordered a navigable river or stream, the major transportation routes of the period. Few were located inland because of the almost nonexistent road network.

Archaeological research on Delaware's earliest historical period can illuminate at least three basic cultural and historical phenomena: 1) the development of the frontier; 2) comparative colonialism; and 3) ethnic relations. During this period, three European countries established colonies on Delaware soil, an essay in comparative colonialism in microcosm. Each colonizing nation's goals and motives, means, and cultural traditions left their imprint on the form of the colony. In investigating these early frontier colonies, historical archaeological research can address differences and similarities in political and social structure, economies, technological traditions, and belief systems. They can be explored as manifested in daily life and in each colony's interaction with the new physical environment, with native Americans, and with other colonies, both in Delaware and elsewhere along the Atlantic coast. Delaware historians have approached the study of this early period along similar lines, thus a historical data base exists for comparative archaeological inquiry (Dahlgren and Norman 1988; Hancock 1976a, 1976b; Hoffecker 1977; Loehr 1952; Munroe 1978; Weslager 1961, 1967, 1987). The Penn period also warrants special attention, as the Penn proprietorship established a new colonial sociopolitical system. Furthermore, with the rise of Philadelphia, the frontier pushed westward, replaced in the Delaware Upper Peninsula with a more stable economy based on commercial agriculture and trade (Lindstrom 1978; Walzer 1972). By contrast, a more frontier-like, subsistence-oriented economy continued to dominate in the Lower Peninsula until Delaware and Maryland settled their boundary dispute in the 1760s.

Cultural diversity also characterized 17th century Delaware. Ethnicity as socially and politically relevant and as a culturally meaningful identity may be explored through all aspects of life. It may be seen as a body of retained cultural traditions or as acquired symbols of identity, ways of maintaining group boundaries and managing relations between groups. Research based in the theoretical view

of ethnicity as cultural tradition focuses on acculturation and assimilation. Scholars emphasizing ethnicity's role in group identity see it as an adaptive strategy for mediating relations of power. Despite these differences in orientation, both approaches recognize the role of material culture in ethnic identity and group interaction, and hence the appropriateness of archaeology to the study of ethnicity (cf. Babson 1990; Brown and Cooper 1990; Deagan 1983; De Cunzo 1987; Deetz 1963; Epperson 1990; Howson 1990; McGuire 1982; Praetzelis, Praetzelis, and Brown 1987; Schuyler 1980; Stine 1990).

While these research issues should guide archaeological study of Delaware's early history, basic data remain the greatest immediate need. This period is especially incompletely documented in historical records and extant material culture, is associated with the smallest number of archaeological sites (a function of population density), and is the least well known archaeologically. Before more specific questions can be asked of the domestic economy, manufacturing and trade systems, landscape, and social group identity, behavior, and interaction, more information on the nature of the archaeological record is needed. Only 19 sites occupied prior to 1730 have been identified in Delaware, and only 10 of these have been subject to any archaeological testing and/or surface collecting (one burial, a dike, a filled well, the New Castle County courthouse, one frontier fortification, and five early farmsteads). Thus, for the 17th and early 18th centuries in Delaware, site distribution, size and organization, the physical environment, and material culture patterning remain barely understood. Settlement pattern, farmstead and other site components and their layout, foodways, natural resources and their use and alteration in production processes, trading patterns, domestic and social life—all of these must first be reconstructed. More sophisticated questions can then be generated regarding ethnicity, its role in colonial interaction in Delaware, and the development and evolution of the frontier. At the same time, comparisons can be drawn between Delaware's colonial systems and those of the Dutch in New York and New Jersey, the French in the Northeast, Southeast and Midwest, the English in New England, Maryland, and Virginia, and the Spanish in Florida and the West.

Excavations at two neighboring farm complexes near the Leipsic River in Kent County are providing our first detailed look at early Delaware farms (FIGS. 3, 4). The University of Delaware Center for Archaeological Research excavated the sites in 1991. Preliminary research and analysis indicate their occupations partially overlap, between ca. 1680 and ca. 1730, and that one farm was tenanted, the other owner-occupied (David J. Grettler, personal communication, 1992).

## II. 1730-1770

By the middle of the 18th century, population increases and commercial and agricultural expansion stimulated the growth of towns and the development of transportation and industry in Delaware. A tremendous influx of immigrants arrived in the Philadelphia region between 1725 and 1755, particularly from England and Ireland. In the year 1728, for example, a reported 4,500 immigrants, mostly Scots-Irish, arrived in Delaware (Munroe 1978: 161). Most immigrants arrived as indentured servants, but many others from Europe could afford the cost of transportation, and a sizable number of Africans were imported as slaves (Bailyn 1986; Galenson 1981; Munroe 1978: 160). Immigration from other colonies, particularly from Maryland's Eastern Shore, also contributed to the colony's population growth. Scholars have placed Delaware's population in 1740 at about 12,000—6000 in New Castle County, 4200 in Kent, and 1800 in Sussex. These figures exclude slaves, who probably accounted for one-third to one-fifth of the population, bringing the grand total to approximately 13,000 (Essah 1985; *Pennsylvania Archives* 1891: 741-742). Dissenters such as Presbyterians, Quakers, and Methodists comprised the majority of these inhabitants, with the balance of the European and European American population primarily Anglicans (Hancock 1962).

Internal trade as well as population increases spurred town growth during the middle decades of the 18th century (Lemon 1967). Communities that appeared at prominent crossroads or navigation locations and served as focal points for the local economy and society have been termed "commercial towns" (Heite and Heite 1986a). These towns usually con-

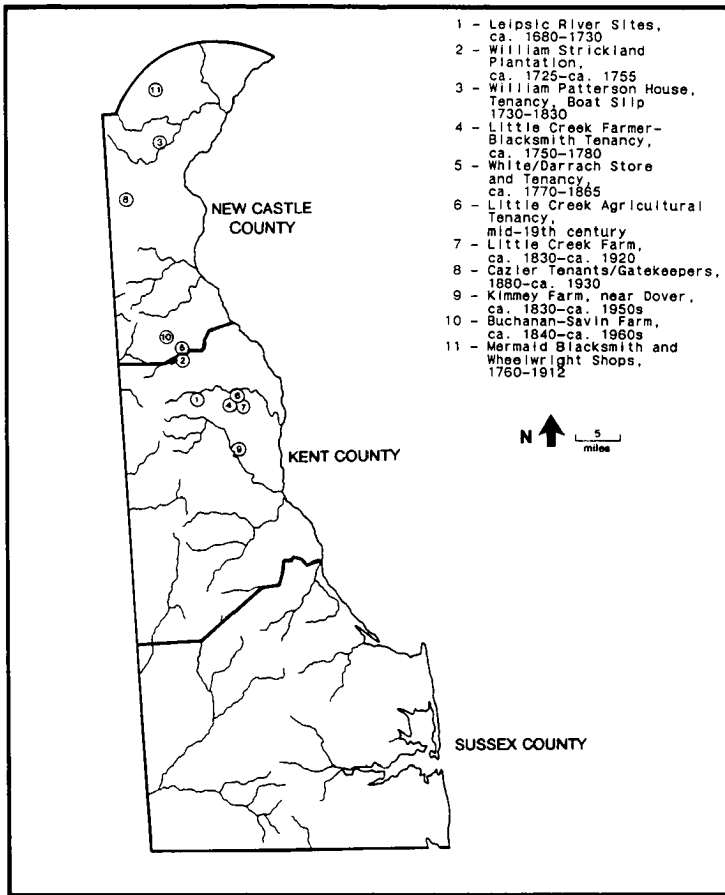


Figure 3. Delaware historical archaeological sites recently investigated within the research context of the *Management Plan* and cited as examples in this article. (Reproduced courtesy of the University of Delaware Center for Archaeological Research.)

sisted of a tavern, a bridge or fording place, a grist mill or saw mill, wharves if on a navigable river, maybe a store, and some dwellings.

New Castle and Lewes, the colony's principal 17th-century settlements, remained important throughout this period. Wilmington, however, grew into the largest urban center in the Delaware colony. Chartered in 1739, Wilmington soon became a port of entry, a post town, and an important link in the Philadelphia trading network. The town grew rapidly, from about 600 inhabitants in 1739 to nearly 1200 by the Revolution (Munroe 1978: 160). Wilmington's proximity to the Brandywine mills proved of special significance. The town served as a receiving center for

local and regional farm produce, brought by water from the small villages of the Upper Peninsula, or overland from southeastern Pennsylvania (Lemon 1967, 1972). Millers processed the wheat, and merchants shipped the flour and other produce up the Delaware to Philadelphia (Lindstrom 1978; Walzer 1972).

Waterways remained important to transportation and commerce as roads were still limited in number and of generally poor condition. From Wilmington, a nexus of roads radiated west, south, and north, connecting the Delaware and the rivers draining into it with the head of the Chesapeake Bay, Kent and Sussex counties, and southeastern Pennsylvania.

Between 80 and 90 percent of the colony's

population during this period engaged principally in farming (Egnal 1975: 201). Farmers in the Piedmont and Upper Peninsula practiced a system of mixed husbandry, combining the cultivation of grains with livestock raising (Bidwell and Falconer 1941: 84). Wheat remained the primary grain produced, followed by rye, corn, barley, oats, and garden vegetables (Bausman and Munroe 1946; Lemon 1967, 1972; Strickland 1801). These commercial farming communities sold a high proportion of their agricultural produce. They required good farmland and access to markets. High percentages of wealthy farmers, artisans, professionals, and merchants characterized these communities, along with a high proportion of large farms. In contrast, subsistence farms, operated by poorer farmers and farm laborers, characterized the Lower Peninsula (Main 1973: 26–32). By the middle of the 18th century, home manufacturing also contributed to the economies of New Castle, Kent, and Sussex counties (Main 1973).

The lumber industry in southern Delaware grew in importance, particularly harvest of vast stands of cedar and pine, and the shellfish industry was established in the bays of Sussex. Shipbuilding became a significant industry, especially at Lewes, but also at other commercial towns in the Upper and Lower Peninsulas (Crowther 1973). The iron industry also flourished in the Lower Peninsula. Ironmasters established several iron furnaces beginning in the 1760s (Heite 1974; Tunnell 1954). These iron plantations required large amounts of charcoal and wood supplies to operate, drawn from the extensive tracts of timber. A settlement pattern consisting of a core furnace village surrounded by a dispersed population of farmers, woodsmen, and coalers thus characterized these ironmaking communities. Most of these furnaces had ceased production by the beginning of the American Revolution, unable to compete with the superior products of the Pennsylvania furnaces.

Extending the research initiated on 17th- and early 18th-century archaeological sites in Delaware, the investigation of second-period sites can illuminate the colony's transition from a frontier to a commercial agricultural hinterland. Expansion inland and away from the early water transportation routes accompanied this economic growth and reorientation (Heite and Heite 1986a; Lemon 1967, 1972; Munroe

1978; Wise 1980). Settlement pattern studies can compare the older with the newer areas of occupation, focusing on the relationship between the influences of environmental and cultural variables. Extended and more sophisticated trading networks were also essential to the new economy and population growth. Colonial production and exchange networks, wholesale and retail distribution systems all await detailed reconstruction.

#### *Domestic Economy*

A program for the archaeological study of domestic economic systems was broadly outlined above. To operationalize such a research program for this period, three interrelated topics are proposed as foci for archaeological research in Delaware over the next five years—architecture and land use, foodways, and self-sufficiency and market participation. Research questions include: how do households utilize architecture and the land to achieve their goals? How do socioeconomic status and aspirations, technology, household economy, ethnicity, and ideology and values all influence the construction of domestic buildings and the use and improvement of the land? To pursue these questions, archaeological research designs must assure data are collected not only on buildings and artifacts. Rather, all possible evidence of land use, activity areas, and landscape alteration must be sought. Episodes of cutting and filling, the construction, use, reconstruction, and abandonment of landscape features such as fences, paths, and drains, land use and activity areas identifiable through chemical signatures in the soils, and the natural and cultural vegetation—trees, gardens, and other plant communities—all must be documented.

Foodways, the interrelated systems of food procurement, preparation, and consumption (Anderson 1971), is a topic of long-standing interest in historical archaeology and one for which much comparative data have been amassed. Viewed as the domestic economy writ small, foodways derive from complex interrelationships among technology, natural environment, social and economic variables, trading networks, household occupational structures, cultural traditions, and even religion and beliefs. Clearly, in order to reconstruct and interpret foodways, information is needed on all of these variables. From archaeological sites, all



Figure 4. Area C of the Pollock Site (7K-C-203C), the archaeological remains of a farm complex along the Leipsic River occupied between ca. 1680 and 1730. Recently excavated by the University of Delaware Center for Archaeological Research for the Delaware Department of Transportation, the site contained the post-in-ground house with storage cellars visible in this view. (Reproduced courtesy of the University of Delaware Center for Archaeological Research.)

cultural materials associated with food production and procurement, processing and storage, preparation, and consumption must be collected and analyzed. Food remains themselves—faunal and ethnobotanical—must also be collected through wet and dry screening and flotation.

The archaeological investigation of self-sufficiency and market participation seeks to place the household in a local, regional, and international economic context. Here the commercialization of agriculture and the expansion of trade are approached from the point of view of the individual producer and consumer. Archaeologically recovered items can be identified as produced on-site for household consumption, produced for barter or trade, or produced elsewhere and acquired for consumption on-site. Foodways provide one avenue of approach to these broader questions. Whether looking at foodways or other components of the

domestic economy, reconstructing trading networks remains central to the investigation. At the same time, on-site production and self-sufficiency are clearly reflected in land use. Thus an integrated archaeological as well as documentary study of land use, foodways, and market participation at pre-Revolutionary Delaware domestic sites will lead to increased understanding of the historical and demographic processes dominating this era: the commercialization of the agricultural economy; population growth and expansion across the landscape; and extension of trade networks.

#### *Manufacturing and Trade*

In the decades preceding the Revolution, Delaware manufacturing related principally to agricultural production and processing, supplemented in southern Delaware by timber process-



ing, iron production, shipbuilding, and shellfish harvesting and processing (Crowther 1973; Heite 1974; Tunnell 1954). Questions guiding research into these non-agricultural production and processing sites remain basic, as comparatively little is known archaeologically of colonial Delaware industry (cf. Heite 1974, 1983). Thus documentary and archaeological data are needed on production facilities, the use and alteration of the landscape, sources of raw materials, production processes, the disposal of production by-products and waste materials, the products themselves, work patterns, and product distribution networks.

Agricultural products formed the basis of Delaware's economy during the 18th century, and the archaeological study of agriculture is proposed as a research focus for the next five years, as it has been for the past several years (cf. Catts and Custer 1990; Hoseth et al. 1990; Shaffer et al. 1988). Perhaps more than with any other "industry," agricultural production and domestic economy intersect. Thus the questions outlined here relating to agriculture as production are meant to complement and extend inquiries into agriculture and domestic life. As a result, the foregoing discussion of architecture and landscape and of self-sufficiency apply to the investigation of agricultural production as well as to household economic strategies. In analyzing and interpreting agricultural structures and landscapes, emphasis should be placed on building function, on the identification of discrete activity areas, and on the layout, organization, and spatial interrelationships among these elements of the agricultural complex. Archaeological, landscape, and documentary research must therefore address the entire farm and not merely the immediate vicinity of the farmhouse and associated outbuildings (cf. Adams 1990; Epperson 1990; Journey and Moir 1987; Stine 1990). Farm products and production processes can be studied through analysis of tools and equipment and faunal and archaeobotanical remains. Farms across the state must be investigated so that ultimately comparisons among geographic regions can be made. The relationships among the developing agricultural economy and the constraints and advantages of the natural environment, the larger economy, and the social and political systems will thus be further elucidated.

As trade expanded in Delaware in the later colonial period, various trade and transport facilities developed (Heite and Heite 1986a; Munroe 1978). Physical transport facilities and equipment, storage facilities, and the distribution networks of this trading system, from private landing to port city, remain incompletely documented and understood by historians and archaeologists. Thus archaeological investigation of shipwrecks, landings, wharves, docks, warehouses, overland transshipment points, and wholesale and retail shops and stores of this period is a priority in Delaware for the next five years.

### *Landscape*

In addition to research on land use and the landscape of individual sites, as emphasized under Domestic Economy and Manufacturing and Trade, archaeological investigations must also focus on sites as components of larger settlement systems. Settlement system studies must consider natural environmental variables such as topography, soil type, and proximity to a water source, and cultural variables—social, economic, technological, and ideological—such as the availability of land, and distances to nearest neighbor, to kin, to church, to industrial power sources, to markets, and to transportation. Analysis may proceed at different levels. For example, the siting and distribution patterns of individual property types such as private river landings, commercial grain farms, or Methodist churches may be studied. Similarly, larger settlements comprising an assemblage of individual property types may be the focus of research, such as the ports of New Castle and Wilmington, the commercial river landing towns, the small service nodes that characterized the overland transportation system, or the iron plantations. Ultimately, all these pieces together defined a statewide (or in this period colony-wide) settlement system, one that can be studied as it evolved over time. Settlement system dynamics are not yet understood, both the ways the system responded to and the ways it contributed to changes in transportation, regional or national economics, technology, social structure and organization, population size, and local and regional ecology (cf. Langhorne 1976; Leone 1973; Lewis 1984; Lukezic 1990; Paynter 1982; Singleton 1985; Starbuck 1986; Wall 1987).

*Social Group Identity, Behavior, and Interaction*

Beyond the research proposed above, the study of social group identity, behavior, and interaction requires 1) investigating other property types; 2) investigating the interaction that occurs beyond the individual site, at the level of the community, for example; and 3) comparing sites associated with people of different groups. Regarding the first, data are needed from sites such as inns and taverns, courthouses, and churches. Although historical archaeologists in Delaware have recognized the potential for community studies (cf. Catts 1986; Catts, Shaffer, and Custer 1986; Coleman, Hoseth, and Custer 1987: 200; Custer, Bachman, and Grettler 1986: 198; Heite and Heite 1985, 1986b), they have yet to explore the concept of community, the nature and range of colonial communities, and their evolution over time. The commercial river-landing towns and smaller overland transportation and industrial processing hamlets developing across the colony in this period as well as the rural farm communities offer the opportunity to explore the changing nature of community. Important not only in their own right, these communities also exerted tremendous influence on later settlement patterning and social, political, and economic life.

Comparing individual sites associated with members of different cultural groups will result in better understanding of the nature of group identity and interaction. In this period, ethnic diversity was not as great as during the colony's initial settlement, yet by no means was Delaware culturally homogeneous. Native Americans, Englishmen, Scots-Irish, native-born Delawareans of Swedish, Dutch, and English descent, immigrants from other American colonies, and African and native-born slaves all resided together in the colony (Bailyn 1986; Galenson 1981; Munroe 1978). Occupational and socioeconomic diversity increased in the middle of the 18th century, as the population grew and the economy became more commercialized and specialized. Farmers can be compared with merchants, craftsmen, small-scale industrialists, and the numerous Delawareans involved in transporting raw materials and goods to markets and to consumers. Equally important, comparisons can be drawn between the commercial agriculturalists of the Piedmont and Upper Peninsula and the essen-

tially subsistence farmers of the Lower Peninsula, and among large plantation owners, small-scale farmers, tenants, indentured servants, and slaves (cf. Baugher and Venables 1987; Deagan 1983; Deetz 1977; Honerkamp and Zierden 1984; Reitz and Honerkamp 1983; Schuyler 1980; South 1977).

Three Delaware sites from this period have recently been the subject of data-recovery excavations (FIG. 3). The research questions guiding these projects all derive from the *Management Plan*. The plantation William Strickland and his family occupied from the late 1720s to the mid 1750s near Smyrna, Kent County, for example, yielded over 8000 faunal specimens plus thousands of oyster, clam, and whelk shells, and seeds, nuts, and fruit pits (Catts, Jamison, and Scholl 1992). Just across Eagle Run from the Reads and Dickson's Store (Catts, Hodny, and Custer 1989), another important 18th-century Christiana Bridge mercantile family, the Pattersons, had established themselves. In 1991, archaeologists excavated the Patterson mansion house, a tenant house, and a boat slip (FIG. 5) (Catts et al. 1993). A farmer-blacksmith's tenant house and lot in Little Creek Hundred, Kent County, occupied from ca. 1750 to ca. 1780, is providing archaeologists with insight into Delaware's 18th-century farmer-craftsmen (Grettler et al. 1993).

### III. 1770-1830

Coming at the start of this period, the American Revolution had a considerable effect on Delaware's inhabitants. The British blockade disrupted the maritime economy along the Delaware River and its tributaries. British warships landed raiding parties with impunity and captured or took foodstuffs, livestock, and slaves from the inhabitants. The pro-Loyalist outlook of many Delawareans contributed to the social and political unrest in the colony (Hancock 1977; Hoffman 1976: 287-290; Kern 1987). In addition, several military campaigns crossed Delaware during the war, though most military activity was confined to the Piedmont and Upper Peninsula (Cooch 1940).

By 1770, Delaware had settled its century-long boundary disputes with Maryland and Pennsylvania. As a result, Sussex County became the largest in Delaware, with a surface



Figure 5. William Patterson, a successful merchant and mariner, and the Patterson family occupied this house site (7NC-E-99C) on the outskirts of Christiana Bridge between 1730 and 1830. The stone-lined cellar of the original house appears in the left foreground; the cobble foundations of a kitchen and other additions are visible above and below the cellar. A detached brick office-shop, with a well out front, can also be seen in the top center of the view. The University of Delaware Center for Archaeological Research investigated this site for the Delaware Department of Transportation. (Reproduced courtesy of the University of Delaware Center for Archaeological Research.)

area of 940 square miles, nearly the size of New Castle and Kent counties combined. The populations of both Kent and Sussex counties grew also with the addition of these new lands. By 1800 Delaware was home to 64,273 inhabitants. Nearly 40% of the population lived in New Castle County, with the remainder divided almost evenly between Kent and Sussex counties. Slightly fewer than one-half of the Africans and African Americans in the state in 1790 were free. By 1800 this proportion had increased to over 57%, and in 1810, the federal census recorded fewer than one-quarter of the Africans and African Americans as slaves (U.S. Census 1790, 1800, 1810). Free African-American labor played an increasingly important role in farm production in Delaware as several factors reduced the profitability of

slavery prior to the Civil War (Bausman 1939).

Delaware remained overwhelmingly agricultural throughout this period. The rapid population growth of the late 18th and early 19th centuries forced many new farmers to clear and farm lands of poor or marginal quality. Wheat still dominated in the Piedmont and Upper Peninsula. Farming methods not emphasizing conservation, erosion, exhausted land, and a decline in wheat prices, however, soon meant economic woe for Delaware farmers. Many farmers were hard-pressed to turn a profit, and thus migrated to better lands in the west during the 1820s and 1830s.

As more and more people left Delaware, the resulting labor shortage made the cultivation of marginal and exhausted lands even less profitable. In the Piedmont and Upper

Peninsula, a reorientation of the Delaware landscape occurred, as less productive farms were abandoned and incorporated into the larger holdings of wealthier farmers (Herman 1987). Farmsteads averaged a little over 200 acres, and most farmers had improved about 60–70% of their acreage by 1820 (Herman 1987: 113–114). By the middle of the century, improved land had increased to over 90%, with wheat and dairying still dominating agriculture in the Piedmont and northern Upper Peninsula (Michel 1985).

Corn agriculture continued to predominate in the Lower Peninsula, and in the southern part of the region hogs and beef cattle contributed substantially to the economy (Garrison 1988; Macintyre 1986; Michel 1985). Agricultural production, however, remained comparatively low throughout the first quarter of the 19th century. Compared to other parts of the state, farms were smaller in the Lower Peninsula, and considerably smaller percentages of these farms' acreage were in use through the middle of the century (Michel 1985).

While agriculture suffered, commerce and manufacturing fared better during this period. After the Revolution, rapid industrial and urban growth characterized the Piedmont and Upper Peninsula. The development of new sources of income and employment, particularly in urban and industrial contexts, partly offset the loss of jobs in agriculture (Lindstrom 1979: 300; Taylor 1964a: 441). A rudimentary textile industry developed in the Piedmont region, greatly stimulated by the War of 1812 and the Embargo Acts that preceded it (Munroe 1979; Pursell 1958). Grist mills, fulling mills, and snuff mills also predominated in industrial areas of the Piedmont and Upper Peninsula (Coxe 1814).

A form of extensive subsistence farming coupled with home manufacturing dominated the economy of southern Delaware during this period. Tench Coxe (1814: 76), in his report on United States manufactures for the year 1810, indicated that Sussex County homes held over 70% of the looms in Delaware. Over 62% of the total value of flaxen goods, and over 75% of the wool produced in the state also came from homes in Sussex County. Twenty distilleries in the county produced nearly half of the value of liquors distilled in the state. Though the demise of western Sussex County's iron furnaces occurred by the 1770s, smaller and more econom-

ical bloomery forges replaced them. New industries were also established in the Lower Peninsula, such as preparing snuff from tobacco and producing salt from brine.

The transportation network and increasing industrial production facilitated urbanization in New Castle County during the first quarter of the 19th century. However, most of the important towns of the previous period continued as marketing, milling, and shipping centers for only a brief period into the 19th century. Methods and routes of transportation in the Piedmont and Upper Peninsula changed substantially, as first turnpikes and then canals were introduced. New settlements grew along these routes, especially at their intersections, eclipsing several earlier commercial centers. At the same time, though not as successful as in the previous period, small transshipment points, such as local landings and villages, remained integral to Delaware's economy. Most featured small clusters of dwellings, storehouses, mills, taverns, and shops.

One archaeological research goal in Delaware is to better understand diachronic historical and cultural processes. To a certain extent, this requires asking comparable questions and collecting comparable data across time. To this end, the research program outlined in this *Plan* should be considered cumulative; the research questions and associated data requirements presented for each time period apply also to all subsequent study periods. For each period beginning with this one, then, (1770–1830, 1830–1880, 1880–1940), discussion centers on research questions and data needs relevant to that and later periods that have not previously been introduced.

In this period spanning the American Revolution and the early republic, several cultural-historical phenomena may be profitably studied archaeologically:

- a. The recovery of the agricultural economy following the American Revolution, its continued growth coupled with the expansion of the agricultural landscape over the first half of the period, followed in turn by a period of decline, abandonment and reconsolidation (Herman 1987);
- b. The associated growth and subsequent decline of the river landing towns in response to the commercialization of the agricultural economy and changes in

transportation (Welsh 1956);

c. The expansion of industry, in part a response to the declining agricultural economy, and its impact on the landscape and on community growth and development (Lindstrom 1979; Taylor 1964a);

d. The relationship of these developments to the consolidation of a hierarchical class-based society.

### *Domestic Economy*

The archaeological research program for Domestic Economy has identified architecture and landscape, foodways, and other domestic material culture, e.g., goods produced and/or consumed by the household, as focal points for study. Recent archaeological investigations in the state have already contributed to an understanding of these cultural elements in the later 18th and early 19th centuries (Beidleman, Catts, and Custer 1986; Catts and Custer 1990; Catts, Hodny, and Custer 1989; De Cunzo et al. 1992; LeeDecker et al. 1987). Comparison becomes especially important in this time period, between the 1770–1800 period of continued agricultural growth, and the 1800–1830 period of agricultural decline and industrial development. What impact did these trends have on agricultural, mercantile, and craft/industrial households? In particular, what strategies did households employ to survive agricultural and commercial failure and depression? How do these strategies, and the flexibility to adjust strategies and adapt, vary with class, occupation, location, or other variables?

### *Manufacturing and Trade*

The research program for historical agriculture in the New Jersey Pinelands proposes a focus on “the relationship of food production to the natural and cultural environment” (New Jersey Pinelands Commission 1986: 42). Understanding the interrelated impacts of natural and cultural factors on agriculture and the agricultural economy will illuminate Delaware cultural history as well. In the later 18th century, agricultural production expanded across the Delaware landscape. By the early 19th century, however, economic stagnation had occurred. Reconstructing and analyzing settle-

ment patterns constitutes one avenue through which to explore these processes. What settlement pattern (or different settlement patterns across the state) evolved by 1800 in association with agricultural development? What changes occurred in the 1800–1830 period as a result of soil exhaustion and agricultural failure? Can patterns of farm abandonment be plotted? If so, how do they correlate with the date of initial agricultural settlement in the area, soil quality, farm type (e.g., subsistence vs. commercial grain vs. commercial corn and cattle farming), and other geographical, environmental, and cultural factors? The early 19th-century crisis in Delaware agriculture can also be examined through detailed case studies of individual farms. This requires assembling studies of sample farms: farms that survived the crisis and farms that did not; farms of different sizes and ages; farms associated with different geographical and other environmental features; farms of different types; farms operated by owners of different ethnic backgrounds and socioeconomic positions; farms operated by owners vs. those worked by tenants, etc. As much as possible about the farm’s operation and farming practices should be reconstructed (see suggestions under 1730–1770, Domestic Economy and Manufacturing and Trade in relation to agriculture), and in particular evidence sought regarding the impact of and responses to the agricultural crisis. Both changing farming and land-use practices and changes in farm families’ domestic strategies in response to the economic stress should be investigated. For example, Herman has identified architectural rebuilding cycles occurring at patterned intervals in central Delaware, paralleling significant social and economic changes (Herman 1987: 128). Comprising three distinct phenomena (replacement, transformation, and new construction), these rebuilding cycles can be investigated archaeologically, providing data not only on extant structures from the period (“the winners”), but also on the farmsteads that did not survive (“the losers”) (Upton 1983).

As a result of Delaware’s declining agricultural economy and other technological, economic, and cultural forces, non-agricultural production—or nascent industrialization—emerged as a significant feature of the economy during this period. The research issues outlined here as a guide for the archaeological investigation

of industrialization reflect industrial archaeology's current concerns with industrial ecology, the worker, and the social and economic context of industrialization, as well as with production processes and the evolution of technology (Beaudry 1989b: 4; Buchanan 1979; Leary 1979; McBride and McBride 1989: 115). Research issues are based most closely on those identified by cultural resource managers in the New Jersey Pinelands:

- a. The effects of industrial processes (including resource extraction) on the natural environment; an industry's exploitation of and adaptation to the environment;
- b. The effects of the industry on the social structure and fabric of the surrounding community; the adaptation of an established community to the industry; the creation of new communities; in particular, the creation and maintenance of class distinctions rooted in the industrial organization (see Social Group Identity, Behavior, and Interaction below);
- c. The economic impacts of the industry on the community and region (New Jersey Pinelands Commission 1986: 174).

Crafts and industries comprised the following components: 1) source(s) of power; 2) source(s) of raw materials; 3) a technology; 4) an economic demand; 5) a transportation network; 6) a work force; and 7) a related pattern of settlement (New Jersey Pinelands Commission 1986: 204); these components then become the foci of historical and archaeological investigation. Cultural resource managers in Kentucky have discussed the kinds of information archaeological resources may offer about these industrial components. These too apply to the archaeological study of Delaware's industrial development.

- a. Data on the form and construction of industrial structures;
- b. Data on the siting and arrangement of industrial buildings and other associated features and activity areas, related to environmental, technological, and cultural variables; comparisons should focus on variability and change;

c. Data on technology and technological change; evidence of conservatism, rapid change, or local variation must be analyzed and interpreted in relation to broader economic and technological changes, and economic and/or environmental conditions necessitating adaptation;

d. Data on the products and the production process—the variety of styles, manufacturing methods, raw materials, waste products;

e. Data on the industry's relationship to community growth, development and decline—in the form of community settlement patterns; evidence of the development of subsidiary, affiliated industries and crafts; evidence of increasing commercialization of surrounding farms; evidence of the socioeconomic impact on community members (see also Social Group Identity, Behavior, and Interaction);

f. Data on the organization and behavior of the workers at the industrial site; data on work, sanitary, leisure, and eating facilities provided for workers and their activities and behavior in each context; data on the worker at home and in other social contexts (see Domestic Economy and Social Group Identity, Behavior, and Interaction) (McBride and McBride 1989: 115–118).

Finally, in studying trade and transportation, the research program outlined for the 1730–1770 period must be extended to include the new industries. Both the transportation of raw materials to industrial processing and production sites and the distribution of the goods produced require attention.

### *Landscape*

The settlement patterns resulting first from the expansion and then contraction of agriculture and those of the new industries have already been discussed. The settlement patterns of Delaware's nucleated settlements of this period also warrant study. Both their distribution on the landscape and their internal settlement structure require examination, explanation in terms of natural features and cultural factors, and comparison (see 1730–1770, Landscape);

Heite and Heite 1986a).

*Social Group Identity, Behavior, and Interaction*

Extending the model for exploring social group identity, behavior, and interaction (see 1730–1770) to this time period involves principally two things:

- a. the extension of the individual and comparative studies to include the new industrialists and craftsmen and to explore the new social relations that developed as a result of agricultural crisis and dislocation; and
- b. an emphasis on the concept of class as the principal organizing feature of social group identity, behavior, and interaction during this period.

The first site analyzed and interpreted in the context of Delaware's new *Management Plan* dates to this period. William White established a store on the outskirts of Duck Creek Crossroads (Smyrna) before the Revolution (FIG. 3). His son-in-law operated the store and tenancy until his death in 1805, at which time his heirs converted the store to a residence. They continued to rent it, selling it just before the Civil War. Soon after acquiring the property, the new owner demolished the buildings (De Cunzo et al. 1992). The site is discussed below as a case study in applying the *Plan's* research program (see Applying Delaware's Research Plan for Historical Archaeology: The John Darrach Store Site).

#### IV. 1830–1880

Industrialization, urbanization, and transportation developments in the 19th century significantly impacted the Middle Atlantic (Lindstrom 1978, 1979; Taylor 1964b; Walzer 1972). During the first half of this period, Philadelphia's economic influence over the region declined considerably, a result of Baltimore's rise, the two cities' competition for markets, and a drop in foreign consumption of Philadelphia's agricultural produce. Regional farmers, including those in Delaware, responded by diversifying their production. In

addition, the region devoted ever more resources to manufacturing (Lindstrom 1978: 122).

The economic crises of the first decades of the century contributed to what became an agricultural revolution in Delaware. The Philadelphia, Wilmington, and Baltimore Railroad, opened in 1839, extended the existing water-based systems for transporting Piedmont and Upper Peninsula produce to the growing eastern markets (Potter 1960). The revived New Castle County Agricultural Society and the new Kent County Agricultural Society, established in 1835, encouraged farmers' use of improved drainage techniques, fertilizers, and machinery. As a result, by 1860, the Delaware Piedmont and Upper Peninsula ranked among the finest agricultural regions in the United States (Hancock 1947).

Through the middle of the century, corn agriculture continued to dominate in the Lower Peninsula, but proximity to markets prompted agricultural diversification in the Piedmont and Upper Peninsula. There dairy farming, some wheat production, and market gardening characterized agricultural production (Michel 1985). In the Lower Peninsula, locally grown corn fed the small livestock herds that provided farmers' chief source of income. Home manufactures also continued to provide important supplementary incomes. In the 1849 census, long after Upper Peninsula farming families ceased supplementing their income in this way, more than half of the Lower Peninsula's farmers reported home manufactures as a source of income. Moreover, the region's self-reliant inhabitants often supplemented their farming incomes through smithing, carpentry, fishing, milling, tanning, hunting, and trapping (Garrison 1988; Michel 1985: 10–12).

The extension of railroads through Delaware significantly influenced the course of the state's economic development. The first line, constructed in 1832, was built as competition for the Chesapeake and Delaware Canal (Hoffecker 1977: 43). Within a decade, the Philadelphia, Wilmington, and Baltimore Railroad had become the major transportation route across the Delmarva Peninsula (Dare 1856; Potter 1960). The extension of the Delaware Line to Sussex County between 1856 and 1878 provided a vast agricultural hinterland with direct access to urban markets (Hancock 1976a: 89). The railroad stimulated changes in agriculture and industry, the growth

of new towns, and the development of beach tourism. For example, the railroad made market peach, blackberry, and strawberry farming possible. The establishment of canneries and packing companies in Lower Peninsula towns accompanied this agricultural shift to fruit production (Hancock 1976a: 88).

Between 1830 and 1880, both the number of farms and the acreage under cultivation in Delaware rose (Bausman 1939, 1940, 1941a, 1941b). In each county, farmland accounted for between 75% and 90% of the total available surface area throughout the period. The overall increase in farm number and size reveals that land previously considered marginal for agriculture was brought under cultivation, and suggests an accompanying reorganization and rebuilding of the agricultural landscape.

Beginning in the 1830s in northern Delaware and with the arrival of the railroad in Sussex County, Delaware was the center for peach production in the eastern United States. Rich soil, favorable climate and rainfall, good transportation facilities, and strategic location near large markets made peach production a lucrative enterprise. Rail and steamship lines shipped massive harvests to New York. There the produce was readied for resale to the northern states. The spread of a disease known as the "Yellows" finally devastated orchards throughout the state and brought an end to the boom in the 1870s. Until the peach blight curtailed production, the peach industry proved profitable for a large number of growers, as well as a variety of support industries (Hancock 1976a).

Concomitant with this agricultural growth, however, the income per agricultural worker fell well below that of the non-agricultural worker (Lindstrom 1978, 1979; Taylor 1964a). The absolute size of the agricultural labor force also decreased during this period, from over 76% of the population in 1820 to 70% by 1840 (Lindstrom 1978: 123). Nevertheless, the income of Delaware farm owners was higher than that of farmers in other areas of the nation. Thus, while the economy forced many farmers to become agricultural tenants, or to migrate west or into the cities, successful farmers enjoyed substantial prosperity, re-investing their profits in improvements to the farm (Herman and Siders 1986: 87).

The combination of good transportation, a large labor pool, and a ready supply of raw ma-

terials also promoted the rapid growth and diversification of industry in the Delaware Piedmont. In the 1850s, most workers in Wilmington were employed in cotton manufacturing, iron-casting, wheel-making, railroad-car manufacture, shipbuilding, carriage-making, leather-tanning, and coopery. In addition, the Piedmont and Upper Peninsula supported several small enclaves of manufacture and industry, such as the Hagley and Dupont Mills on the Brandywine, and the textile manufactories along the streams of northern New Castle County.

By the start of the American Civil War, the U.S. Census recorded 380 manufactories in New Castle County. They included a variety of boot and shoe manufactories, flour mills, clothing manufactories, carriage shops, cabinet and furniture manufactories, cotton manufactories, and tin, copper-ware, and sheet-iron factories. Kent and Sussex counties, on the other hand, supported only grist and saw mills along with a few other small manufactories meeting local needs. The trend toward industrialization in New Castle County continued through 1880, when Kent and Sussex counties produced only 1/10 of the total goods manufactured in New Castle County (U.S. Census 1850, 1880).

The American Civil War had a greater social than economic effect on Delaware's citizens. Parts of the Lower Peninsula, particularly those areas with economic ties to the lower Chesapeake, supported the Secessionist cause, while northern Delawareans supported the Union. The major Federal military installation in Delaware, Fort Delaware on Pea Patch Island in the Delaware River, served from 1862 until the end of the war as a Confederate prisoner-of-war camp.

At the outbreak of the Civil War the population of Delaware stood at 112,216. Of this total, nearly 49% resided in New Castle County, including large numbers of Irish and Eastern European immigrants living in Wilmington. Kent County held 25% of the state's population, and Sussex the remaining 26%. Sussex Countians also held most of Delaware's slaves. The vast majority of these bondsmen were the property of small farmers and worked as domestic servants or field laborers. Free African Americans throughout the state generally owned little land. Like their enslaved counterparts, they worked as day laborers in urban areas or as hired farm hands,



though some were skilled artisans (Hancock 1976a: 65). The end of the Civil War and emancipation, though providing freedom, did little to improve the social or economic status of Delaware's African Americans (Essah 1985).

The fifty years spanning the middle of the 19th century brought change to all facets of Delaware life. Thus it is proposed that archaeological research on this period focus on these processes of change:

- a. The impact of the transportation revolution (Hoffecker 1977; Lindstrom 1978, 1979; Potter 1960; Taylor 1964b; Walzer 1972);
- b. The transformation of the agricultural economy as it recovered from the crisis of the early 19th century (Grettlar 1990; Hancock 1947, 1976a; Lindstrom 1978);
- c. The social and economic changes resulting from the Civil War and emancipation;
- d. Change associated with the growth and diversification of industry, in Delaware and across the United States; technological evolution, the reorganization of the labor force and the social structure of industry, and the consumer revolution spawned by America's industrialization (Lindstrom 1978, 1979; Taylor 1964b; Walzer 1972).

#### *Domestic Economy*

The range, variability, and content of agricultural families' production and consumption strategies as they dealt with both the changing basis of the farming economy and with increasing industrialization remain incompletely understood. Industrialization, for example, provided both competition for home manufactures as well as greater availability of inexpensive household goods. Neither have the details of the transition from production to consumption-oriented economic strategies been reconstructed for the emerging industrial workers, managers, and owners. Historical archaeological research has much to contribute to these questions regarding the domestic economic strategies of individual households, as recent studies in the state are beginning to show

(Beidleman, Catts, and Custer 1986; Catts and Custer 1990; Catts, Hodny, and Custer 1989; Hoseth et al. 1990; LeeDecker et al. 1987).

A two-part archaeological research design is proposed. The first involves developing a set of detailed historical and archaeological case studies of individual agricultural, commercial, and industrial households. Historical research assists in placing each household in its local and regional social and economic contexts, and in developing as complete a profile as possible of the household and its activities. Despite the general richness and extent of the 19th century's documentary record in comparison with earlier periods, detailed household-level reconstruction often remains impossible—thus the importance of the archaeological study of the household.

The second research component is comparative. Understanding comes not in the reconstruction of isolated cases, but in establishing the relationships between them and the differences and similarities among them. Grouping of households along social, economic, occupational, and other cultural criteria for purposes of comparison remains an open-ended process determined by the questions being asked. Comparative categories include:

- a. Geographic: Piedmont vs. Upper Peninsula vs. Lower Peninsula; along transportation routes vs. those farther out in the hinterlands; city vs. town vs. rural dwellers;
- b. Socioeconomic: Industrial owners vs. managers vs. workers; large land-owning agriculturalists vs. tenants vs. small subsistence agriculturalists vs. small commercial, diversified agriculturalists, etc.;
- c. Occupational: Farmers vs. industrialists vs. artisan/craftspeople vs. shopkeepers and merchants vs. professionals vs. maritime and other transport workers; slave vs. free;
- d. Ethnic: African Americans vs. European Americans; native born vs. foreign born; English vs. Irish, etc.

Finally, comparisons must be made across time. Within this 50-year period, several starting points for comparison can be suggested:

1830–1860. Agricultural reorganization, initial expansion and reorganization of transportation systems, industrial growth.

1860–1866. Civil War era and associated dislocations.

1866–1880. Impact of emancipation and economic changes wrought by the Civil War; increasing industrialization and continued expansion and reorientation of the transportation system.

### *Manufacturing and Trade*

In addition to the domestic economy and culture of Delaware's farmers, the mid-19th-century changes in agricultural practices, processes, and products promoted by scientific reformers warrant archaeological investigation. Proscriptions for change and to a certain extent actual changes in practice can be reconstructed from the documentary record. Published journals of the scientific reformers and the records of the agricultural societies established in Delaware during this period have proved especially useful (Allmond 1958). Once again, however, detailed reconstructions of this process of change and the variability among farmers of different geographic areas, economic positions, etc., remains to be accomplished. Archaeological studies of changing farm practices require considering the entire landscape of the farm, agricultural outbuildings, and farm tools and equipment.

A change in the basic marketable products of the farm accompanied this reform movement in transforming Delaware's agricultural economy. This transformation followed the extension of the railroad network from north to south (Bidwell and Falconer 1941; Hancock 1976a; Lindstrom 1978; Michel 1985). Similar archaeological data are required to investigate this aspect of agricultural change: patterns of land use and building, and information on agricultural tools and farming equipment.

Applying the previously outlined archaeological research program for Delaware industry to this period requires emphasizing two specific research issues. The first encompasses the evolution of technology and its impact on industrial processes, the industrial labor force, and

the industrial social system (see Heite 1990). The second consists of the transformations accompanying the increasing scale of individual industrial operations, transformations also affecting the industrial labor force and social system. Comparisons among the small-scale, often family-managed and operated mills and the larger industrial enterprises, especially those of the Piedmont, are important, as are studies of individual industrial sites having undergone these transformations.

The study of trade during this period should focus in part on poorly documented transportation facilities, from ships to docking facilities to railroad shipping facilities. A second research issue has been dubbed "supply-side archaeology" (Catts 1989), the archaeology of wholesale and retail establishments distributing consumer goods. The availability of store accounts, shipping records, price lists, and newspaper advertisements in greater numbers in this period enriches the archaeology, as local, regional, national, and international trading networks can be more completely reconstructed. The archaeology of marketing through studies of retail spaces, especially those poorly documented graphically (as are many in Delaware's rural communities) comprises another avenue of research.

### *Landscape*

The research programs for the other domains in this time period emphasize the landscape of individual sites—land use, land alteration, and the meanings of the landscape and its various components. In this domain, evolving settlement patterns form the focus. Numerous, complex, and interrelated phenomena contribute to these changing patterns: the shifts in the agricultural economy and agricultural practices; the transformation of the transportation system via the canal and then the railroads; the increasing scale of industrial operations; the establishment of new industries; and the impact of technological innovations. In general, this research can be accomplished through analysis of historical maps during preliminary surveys. However for geographic areas and time periods for which incomplete map evidence exists, such as for Sussex County for a good portion of the 19th century, archaeological field data are also required.



Figure 6. This artist's reconstruction depicts the Buchanan-Savin farm (7NC-J-175) as it appeared ca. 1930. The Moffitt family then operated it as a commercial dairy, shipping milk to Wilmington along the recently completed DuPont Highway. The University of Delaware Center for Archaeological Research recently conducted archaeological investigations at the site for the Delaware Department of Transportation. (Drawing by Paul McCullough. Reproduced courtesy of the University of Delaware Center for Archaeological Research.)

#### *Social Group Identity, Behavior, and Interaction*

The middle decades of the 19th century witnessed not only increasing stratification and thus distance between social classes, but also increasing interaction among groups as the agricultural, industrial, transportation, and mercantile communities redefined an integrated Delaware economy. The growth of railroad and industrial towns that also served as mercantile centers provided other arenas for social interaction. These non-domestic sites—the inns, taverns, hotels, churches, public buildings, schools (cf. Catts and Cunningham 1986) and granges—should form the focus of study. A wide variety of Delaware's nucleated settlements should be examined, both those established during this period and those surviving from earlier periods when a maritime economy prevailed. Research can proceed from a

framework organized around the concept of community. What did "community" come to mean in the 19th century, and how did the concept change over time as a result of the social, economic, and material transformations that characterized the period? Architecture, landscape, and other material items all mediated social interaction at these sites and thus form the material culture data base.

Finally, this research domain also encompasses sites of military interaction. Thus the material history of Forts Delaware and Dupont, and especially their roles during the Civil War period, form another important topic for archaeological investigation (Catts, Coleman, and Custer 1983).

Since approval of the *Management Plan*, Delaware archaeologists have conducted data-recovery excavations at several post-1830 sites, many occupied into the 20th century. The *Plan*

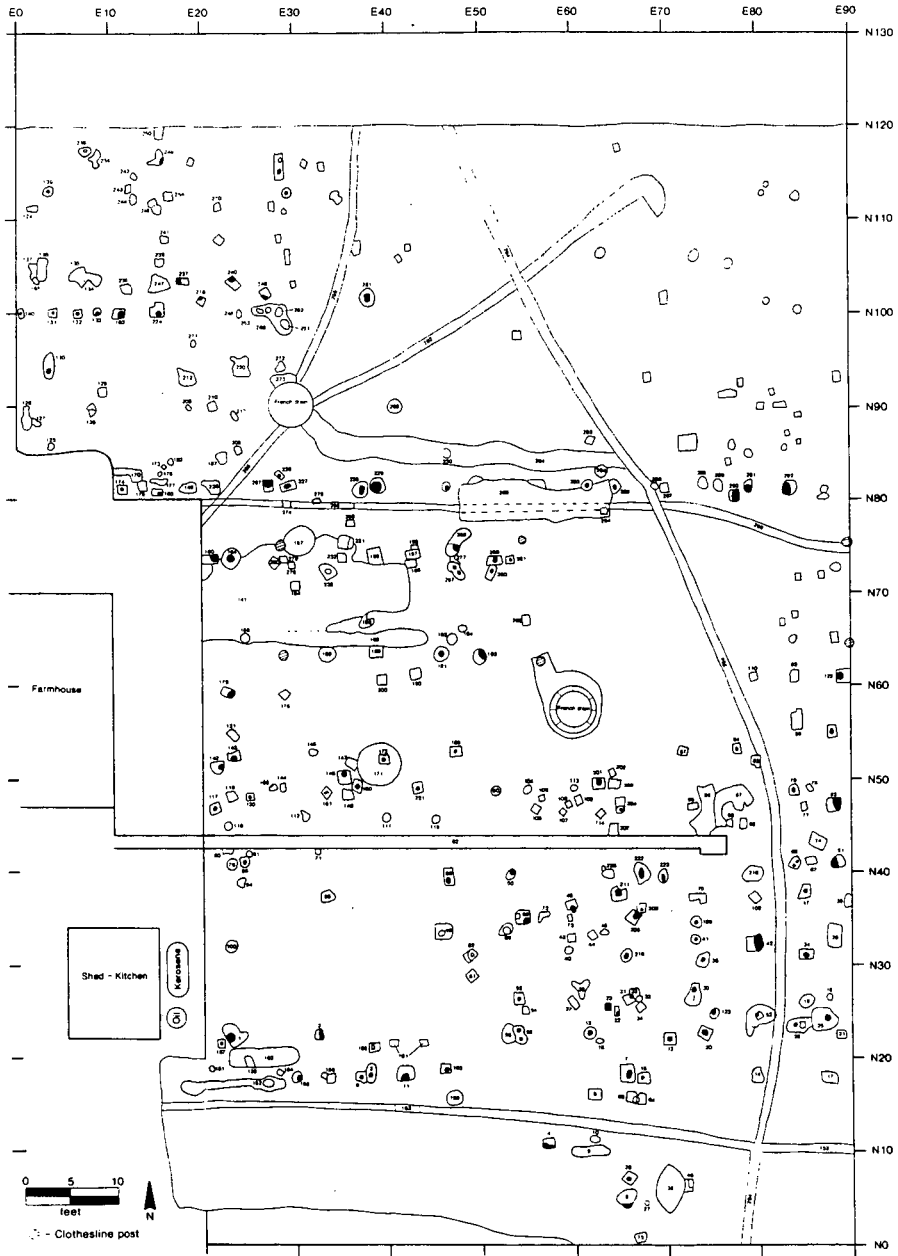


Figure 7. This site plan documents archaeological evidence of the 19th-century farmyard, located immediately behind the house at the Buchanan-Savin farm (7NC-J-175). Fencelines, drainage features, and several post-in-ground agricultural buildings survived as features in the archaeological record. This earlier agricultural complex associated with a mixed farming economic strategy was more compact and clustered much closer to the house than the 20th-century dairy complex shown in Figure 6. The University of Delaware Center for Archaeological Research recently conducted archaeological investigations at the site for the Delaware Department of Transportation. (Reproduced courtesy of the University of Delaware Center for Archaeological Research.)

is guiding analysis and supplementary documentary research, and reports are in preparation (FIG. 3). Among the sites are five farms: a mid-19th-century poor tenant farm in Little Creek Hundred, Kent County (Grettlar et al. 1993); a small, 27 acre, marginal farm also in Little Creek Hundred, occupied by a succession of owners and tenants between about 1830 and 1920 (Grettlar et al. 1993); the ca. 1830–ca. 1920 home of African American tenants who served as gatekeepers for the Caziers, one of New Castle County's wealthiest families, headed by an important agricultural reformer (Hoseth et al. 1992); a farm operated alternatively by owners and farm managers between about 1830 and the 1950s on the outskirts of Dover, Kent County (Jamison et al. 1993); and a farm owned and operated by the Buchanan and then Moffitt families from about 1840 into the 1960s (FIGS. 6, 7). Located in Appoquinimink Hundred, southern New Castle County, the Buchanan-Savin farm evolved from a mixed subsistence and market grain farm to a dairy farm over its 125-year history. Rented to tenants since the 1960s, the farm complex as rebuilt in the 1930s still stood when archaeological excavations were completed in 1990 (Scholl, Hoseth, and Grettlar 1992). Excavation of the Mermaid blacksmith and wheelwright shops' partial remains and extensive archival research are documenting change and continuity across several generations in these 19th-century shops in northwestern Delaware's Piedmont (Catts et al. 1992).

#### IV. 1880–1940

Delaware's population in 1900 stood at 184,735 inhabitants. As previously, the greatest percentage, 59%, lived in New Castle County; 23% lived in Sussex County, and the remaining 18% in Kent County (U.S. Census 1900). Nearly 70% of New Castle County's population resided in Wilmington; many of the city's inhabitants had recently immigrated from eastern or central Europe (Hoffecker 1974). Between 1870 and 1900, the percentage of Delawareans employed in agriculture declined from 39.5% to 26%, while the percentage engaged in industry and manufacturing rose from 23.5% to over 31%. Persons working in the trades also rose during this period, from 8.5% of the total state population to 14% (Reed 1947).

Paralleling this changing occupational structure, the proportionate value of manufactured products compared to agricultural products increased over this 30-year period. Most of the wealth generated by this increased industrial production concentrated in the Piedmont region, near the industrial and commercial center of Wilmington (Hoffecker 1974).

Beginning in the later 19th century and continuing into the 20th, Delaware farmers focused on raising perishables, and correspondingly de-emphasized staples. Farmers grew more diverse crops, such as tomatoes, apples, potatoes, strawberries, and other fruits and vegetables, in response to the demands of markets in New York, Philadelphia, Baltimore, and other cities. Poultry and dairy production also increased significantly in this period, particularly in Kent and Sussex counties. The number of broilers (chickens weighing under three pounds) raised in Delaware grew from 7 million in 1934 to 60 million in 1944, accounting for over one-quarter of the entire commercial broiler production in the country (Munroe 1984: 214–215).

Nevertheless, farm size and the total acreage in farmland declined noticeably (Bausman 1939, 1940, 1941a, 1941b). For example, in Sussex County farm acreage declined by nearly one-quarter between 1880 and 1940. This decline marks a period of farm abandonment and/or readaptation in the early 1900s, coinciding with the beginnings of suburbanization in New Castle and Kent counties. After 1910 in these northern counties, farms of 100 acres or less were in the majority, and in Sussex County farms of this size accounted for over 70% of the total by 1920 (Bausman 1941a, 1941b). Tenant farming, a common feature of the agricultural landscape through all of the preceding periods, became even more prevalent during the late 19th century. Large landowners, having acquired much of their holdings during the hard times of the 1820s, leased their lands to tenants. By 1900 over 50% of Delaware's farmers were tenants or sharecroppers. Between 1880 and 1900 alone this figure represents an 8% increase in farm tenancy (Shannon 1945: 418). Tenancy remained a dominant farming practice into the 20th century.

In the Lower Peninsula, the holly wreath industry flourished beginning in the 1880s, providing many farmers supplemental income in November and December. It was especially

significant during the Depression, declining quickly after the second World War (Eckman 1955: 385; Hancock 1976a: 102). At the start of the 20th century, the lumber industry also still provided a significant source of income in the Lower Peninsula. Especially sought after was virgin Sussex pine, which had grown following the initial cuttings for the railroad two to three generations earlier. Charcoal was an important related industry, in some areas up until the 1950s (Passmore 1978: 13, 14).

Internal transportation and inter-regional routes saw continued improvement, and provided Delaware with better connections to the rest of the Middle Atlantic region. By 1910 the Maryland, Delaware, and Virginia Railroad extended from Lewes to the Chesapeake Bay, providing residents of Maryland's western shore with easier access to the Delaware beaches. By 1924, Coleman Du Pont's revolutionary concrete highway (present-day Route 113) ran the length of the state (LeeDecker et al. 1989; Rae 1975). In the Lower Peninsula, the improvements in regional transportation in turn continued to stimulate growth in tourism along the beaches (Hancock 1976a: 90).

By the turn of the 20th century, America's industrial economy had become truly national in scope; however, Delaware was falling behind the rest of the nation. Large, national companies bought many of Wilmington's successful firms, and others went bankrupt because of competition from the Midwest. Nonetheless, in 1907, Wilmington stood seventh in manufacturing in the United States according to population, and hosted a greater diversity of industries than any other city in the United States (Hoffecker 1974). Industrialization and commercialization remained focused predominantly in the Piedmont north and west of Wilmington, with the Upper and Lower Peninsulas considerably less industrialized. Generally for this period the historical record shows three dominant trends: a developing commercial agriculture, an increasing urbanism, and a growth in light manufacturing, such as carriage-making and cabinet-making, and food-stuff processing, such as canning and juice/syrup production (Hoffecker 1977).

Numerous reasons have been offered for the lack of significance attributed to archaeological resources of this period: the increase in the extent and representativeness of the documentary record; the availability of oral historical

information; the sheer number of sites; and the survival, often not substantially altered, of architectural and landscape features dating from this period. Delaware has not been exempt from this bias against recent-period sites, as evidenced through analysis of the historical archaeological sites inventoried by the state. Of the 257 sites recorded at the time the *Plan* was prepared, only 7 (or 2%) were occupied exclusively after 1880. Although the occupation period of 129 others (or approximately 50%) extends into the late 19th or early 20th century, their origin in the 18th or earlier in the 19th century accounts for their recordation. That most of the thousands of historic standing structures recorded by the State Historic Preservation Office have not been tested for the presence of associated archaeological remains further compounds the problem. While a monumental and clearly unrealistic task at this time, it nevertheless would address the bias against late-period sites.

Several recent studies (cf. Adams 1976, 1977; Askins 1985; Beaudry and Mrozowski 1987a; Branstner and Martin 1987; Carlson 1990; Cheek and Friedlander 1990; Davidson 1982; Henry 1987a, 1987b; Stine 1990), including a few in Delaware (Beidleman, Catts, and Custer 1986; Catts and Custer 1990; Catts, Hodny, and Custer 1989) have demonstrated the research potential and information value of these sites, and indicate that the richness of the information available from other sources enhances these sites' archaeological potential. Considering the material evidence—architecture, landscape, and archaeological artifacts—as offering supplementary, complementary, and often alternative insights into daily life, cultural values and beliefs, social group identification and interaction, and production processes and distribution networks provides the key. Determining the significance of a late-period site proceeds, as in the earlier periods, from an evaluation of the site's potential to address the research questions and issues identified in the *Management Plan*. In addition, archaeologists and cultural resource managers must carefully consider the data potentially contributed by the archaeological record in relation to that available from other sources, the site's integrity, and its representativeness or uniqueness. Decisions must be made on a site-by-site basis. Sweeping generalizations that whole

classes of sites dating to this period lack significance cannot be made; neither can archaeologists and cultural resource managers assume that every site exhibiting integrity is significant, especially when large numbers of similar sites survive intact. For example, projects that will negatively impact large numbers of these later period sites warrant a sampling strategy, one justifiable in the context of the above discussion.

The cultural continuities and changes characterizing this period are both represented in the subjects proposed as archaeological research priorities:

- a. The continuation of trends in agriculture and industry identified in the 1830–1880 period, with an emphasis on the changes in agriculture in the Lower Peninsula (Bausman 1939, 1940, 1941a, 1941b; Hancock 1976a; Hoffecker 1977; Munroe 1984; Shannon 1945);
- b. The increasing ethnic diversity of the population—southern and eastern Europeans moving into the suburbs and hinterlands from Philadelphia and Wilmington, the immigration of Amish and Mennonite farmers into central and southern Delaware, the northern migration of African Americans and the changing relations among African Americans and the European American population (Hoffecker 1977);
- c. Another revolution in transportation, this one associated with the development of the automobile and the extension and improvement of the road and highway system (Rae 1975);
- d. The development of a new component of Delaware's economy, one that remains important today—the growth of tourism along the Atlantic coast (Hancock 1976a).

The broad themes of the research programs presented above for the study of Domestic Economy, Manufacturing and Trade, Landscape, and Social Group Identity, Behavior, and Interaction apply to the archaeological study of the late 19th and early 20th century as well. A research program incorporating in-depth case studies of select sites, settlement pattern analy-

sis, and multivariate comparative studies, remains the key.

The late 19th- and early 20th-century sites currently the subject of intensive investigation by Delaware historical archaeologists were occupied initially earlier in the 19th century. Thus they have been discussed above in the context of the 1830–1880 period.

### Applying Delaware's Research Plan for Historical Archaeology: The John Darrach Store Site

The first historical archaeological site interpreted within the context of Delaware's new *Management Plan* is the John Darrach Store Site, investigated by the University of Delaware Center for Archaeological Research with funding provided by the Delaware Department of Transportation (FIG. 3) (De Cunzo et al. 1992). The research issues that formed the project's focus, the conclusions researchers drew, and the additional research questions the project raised are outlined here to exemplify the potential of a research-oriented approach to historical archaeological resource management. Archival research, excavation of a 25% plowzone sample and of almost 240 features within the one-acre site area, analysis, and comparison constituted the data-recovery investigations of the site. Constructed before the Revolution by John Darrach's father-in-law William White, Darrach operated the Store along the road to the Duck Creek Landing, in Duck Creek Hundred, Kent County, between 1778 and his death in 1805 (FIG. 8). In addition, he rented a portion of the Store as a residence, probably for a time in the later 18th century to the local miller. Between 1803 and 1806, Darrach or his heirs converted the Store to a tenant residence. From then until its demolition in the late 1860s, the Store housed mostly unidentified tenants probably working in farming or laboring in maritime trades (FIG. 9).

Four research themes guided the historical and archaeological investigations of the Store: The Social and Economic Context of Family and Mercantile Activity in the Smyrna/Duck Creek Hundred Community; The Evolution of Architecture and Landscape; Tenancy; and Agricultural Crisis and Reform, 1790–1840. The first, informed principally by historical documents and the archaeological and comparative

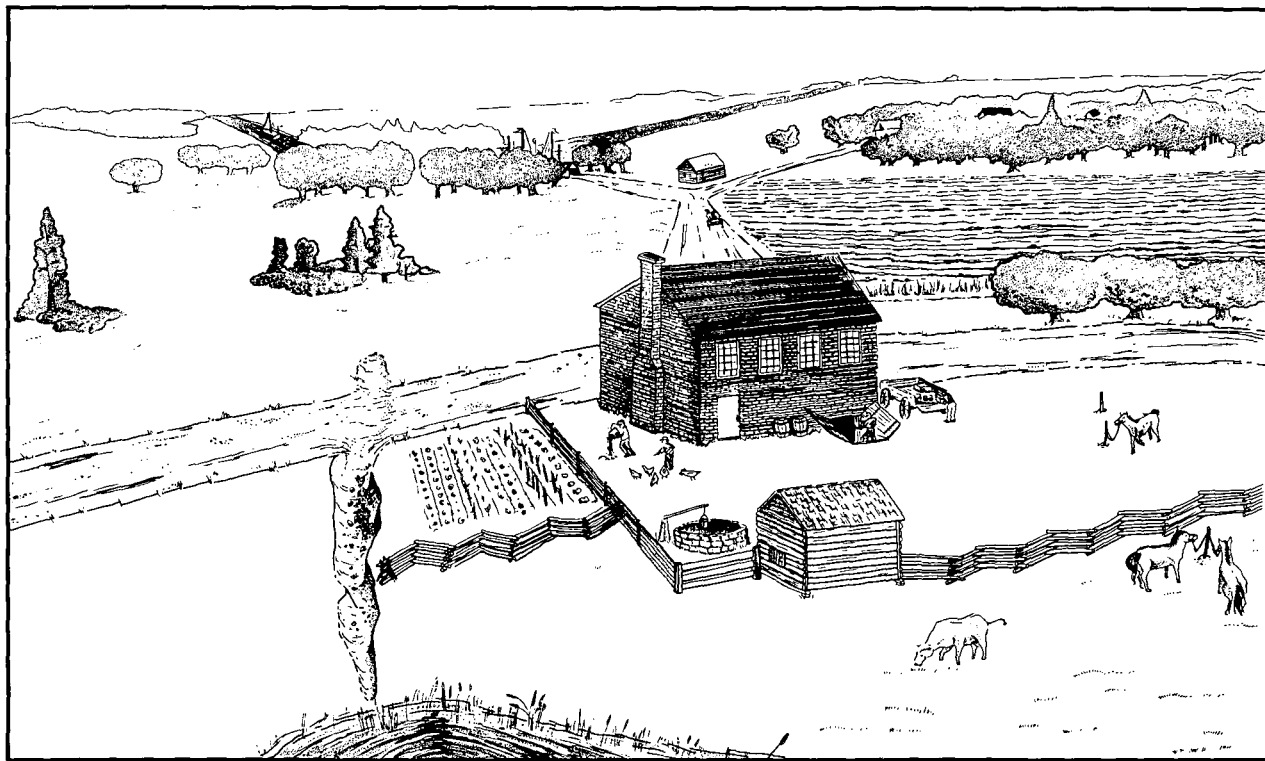


Figure 8. This artist's reconstruction depicts the John Darrach Store site (7K-A-101) near Duck Creek east of Duck Creek Crossroads (Smyrna) between ca. 1775 to ca. 1800, when Darrach had his store in part of the building and also rented quarters to tenants. The University of Delaware Center for Archaeological Research excavated this site for the Delaware Department of Transportation. (Drawn by Robert Schultz. De Cunzo et al. 1992: 292, Figure 91).



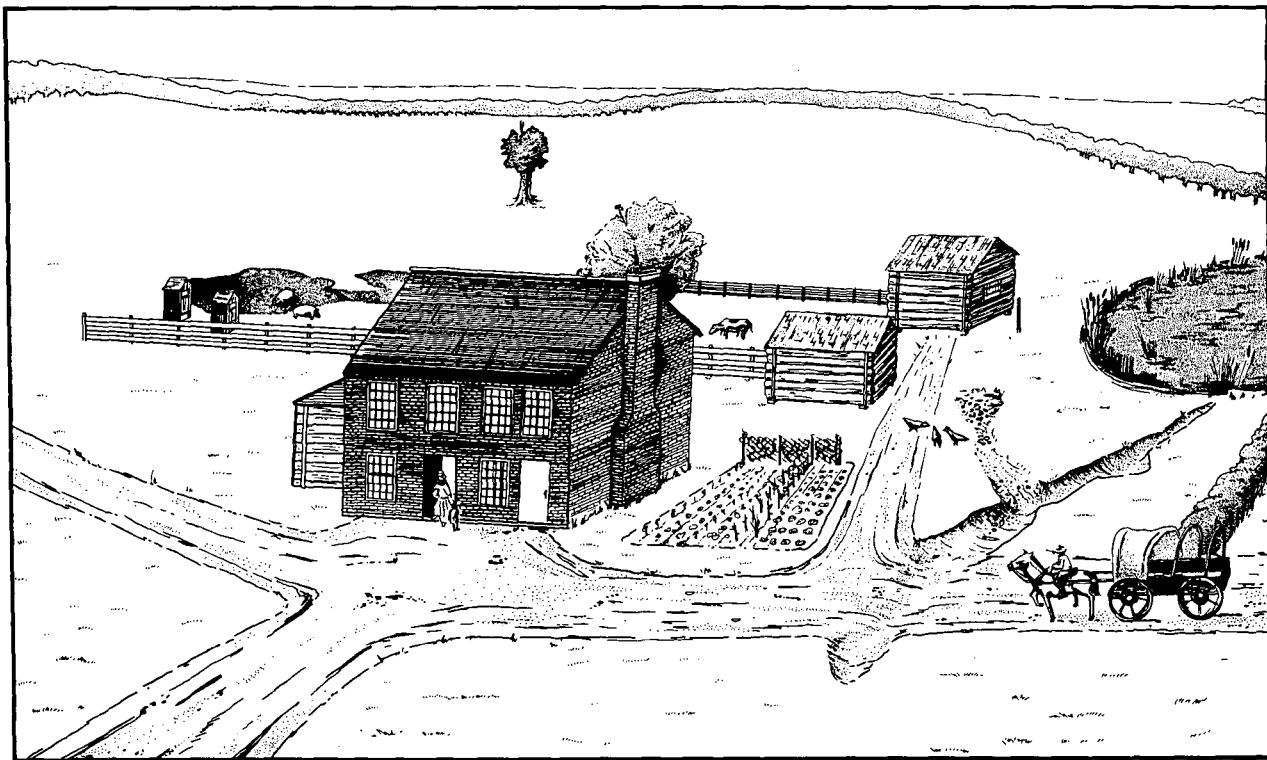


Figure 9. This artist's reconstruction depicts the John Darrach Store Site (7K-A-101) near Duck Creek east of Smyrna between ca. 1805 and ca. 1830, when Darrach's heirs rented the property to tenants. The University of Delaware Center for Archaeological Research excavated this site for the Delaware Department of Transportation. (Drawn by Robert Schultz. De Cunzio et al. 1992: 294, Figure 92).

information on the Store's architecture, focused on the Whites, Darrachs, and other elite mercantile families of Duck Creek in the later 18th and early 19th centuries. These studies revealed the extensive network of kinship linking these families; their expression of social and economic position through their dress, their silver, furniture, and books prominently displayed in large, expensive, permanent brick houses; and the commercial businesses they operated from their often equally large, expensive, and permanent brick stores. Offering textiles, sewing equipment, clothing, liquor, imported foods, spices, and beverages, books, ceramics, and other kitchenwares for cash and in exchange for agricultural produce and other goods and services, these merchants served local community members who patronized them based on a combination of social and economic factors.

The Darrach Store site's archaeological record preserved a case study of the evolution of architecture and landscape in Duck Creek between the second half of the 18th century and the Civil War. When William White constructed his brick store, brick structures were truly a rarity in central Delaware and a visible sign of success and permanence. No outbuildings of this period left archaeological remains, although the presence of an impermanent utilitarian building set on wooden blocks seems likely (FIG. 8). A well in the rear yard served the tenants' kitchen, and their domestic landscape was confined to the west and southwest yards between the Store, the Maryland Road, a gully to the west, and this well and possible outbuilding to the south. Soil chemical levels suggest these early tenants may have tethered their animals near the Store, and/or planted a small garden in the side yard. At the end of the century, John Darrach abandoned the brick Store, moving his home and store into downtown Duck Creek Crossroads (Smyrna). The old Store property was remodeled for tenants, an addition constructed on its eastern end, new outbuildings erected, and the domestic yard enlarged, reorganized, and enclosed by fences (FIG. 9). These latter separated outdoor work areas, storage and work spaces in the outbuildings, gardens, livestock pens, and waste-disposal areas in the form of a large midden and privies. This intermediate landscape of the early 19th century seemingly expressed changing perceptions of

the division of property and property rights soon codified through the agricultural reformers' efforts. Later tenants changed the property little, until new owners in the 1860s reworked the landscape once again, plowing under and planting over all vestiges of the buildings, work yards, gardens, and dumps.

The lives of the Store's tenants were also documented in the archaeological record. In the 18th century, they lived in the western half of the Store, heated by the building's only fireplaces. They did not carry their household refuse—ceramics, bottle glass, food bone, and shell—very far from the back door before dumping it broadcast across the rear and side yards. Ceramics comprise the principal material remains of these families. Domestic, perhaps even locally produced, versatile, multipurpose redwares dominate the assemblage, the expected possessions of a family making do with a few equally versatile, multipurpose cooking pots and pans, as the miller's probate inventory documents. The domestic economic strategy of the later occupants, in residence between the Store's conversion to a tenancy and ca. 1825, is reconstructible in even more detail. Multifunctional redwares continued to predominate in the kitchen and on the table. Supplementing these wares at meals, at tea, and on display in the cupboard were a few creamware and pearlware plates, and creamware, pearlware, and porcelain teawares (FIG. 10). The faunal remains indicate these families served on their earthenware plates and bowls beef, pork, mutton, and chicken, as well as geese and other water fowl, muskrat, opossum, squirrel, rabbit, and locally harvested oysters. All could have been raised, hunted, or harvested by the tenants themselves, or purchased at a store in town, or acquired from a neighboring farmer or waterman. Moreover, all the faunal taxa represented archaeologically served multiple roles in the local economy, as food sources for local consumption and for exchange, and as sources of fur, hides, wool, and feathers. Although many questions remain concerning the lives of the Darrach Store's tenants, they clearly sought the most out of their investment, whether of time, energy, or money.

Finally, this study of the Darrach Store has contributed information on the agricultural crisis and subsequent reform efforts in Delaware between ca. 1790 and 1840. John Darrach



Figure 10. Three reconstructed utilitarian redware vessels from disturbed deposits associated with the foundation of John Darrach's Store (7K-A-101). The milk pan and two butter pots numbered among a minimum of 147 redware vessels discarded by the Store's occupants between ca. 1775 and the 1860s.

clearly took advantage of the opportunities the international economy of the early federal period offered, and profited handsomely. Later, when prices hit bottom, wealthy merchants like the one who leased the Store in the early 19th century amassed control over incredible landholdings. They then set about rebuilding—the economy, the land, and the social relations linking the two. As for their tenants, they placed a premium on resourcefulness, and thus survived. Fortunately, they lived in an area rich in natural resources, despite human efforts to wear out the land.

The historical archaeological research at the John Darrach Store site has generated innumerable questions relating to the central research themes. One group relates to the familial, social, economic, and even political relationships among the mercantile and landed

gentry of the Duck Creek community. How did they interact and what factors unified or divided them? How did they maintain their positions during times of social and economic prosperity, and times of social and economic stress? What roles did both the men and women of these families play in each of these areas? To understand this group fully, however, requires also looking at the rest of the community. How did the lives of the gentry intersect with those of the tenant farmers, small landowners, craftsmen, maritime workers, and day laborers and their families?

The second set of questions focuses on these latter, the majority of the Hundred's population. How did these men, women, and their children negotiate their way through life? How did they meet their needs for food, shelter, clothing, and social intercourse? What

strategies did these families devise, what was the nature and extent of variability among them, and how did they adjust their strategies to economic stresses? The insights offered by study of the Darrach Store tenants' ceramics and food remains are suggestive in this regard, but many more sites are required for comparison before more than preliminary answers to these questions can be offered.

Third, there remain the questions that have formed a focus of historical archaeological research in recent years. The by-words have been consumer choice and socioeconomic status. The questions relate to understanding the economic value and social meaning of the material culture that archaeologists study—the architecture, landscapes, and artifacts. What did large brick houses and stores really mean to Duck Creek community members? What did the landscape signify—the size of one's lot, the way one landscaped it, the way one maintained it, the uses to which one put it? How did people interpret porcelain tea services versus painted pearlware ones versus silver ones? What did they think about eating beef, pork, mutton, muskrat, squirrel, goose, and oysters? Bones and ceramic vessels need to be counted, vanished structures and landscapes reconstructed on paper, but then they must be placed into contexts.

Although many questions remain about Duck Creek Hundred's past, the historical archaeological work at the John Darrach Store site has considerably enhanced our understanding of 18th- and 19th-century life in the Hundred, and will provide a solid basis for future research at historical sites in Delaware. In the end, the success of an archaeological project can perhaps best be measured by the questions that remain. Good research always raises at least as many new questions as it answers. New questions require new data and new sites, ultimately allowing researchers to return to the data provided by the original site and move the interpretations forward one more step. In this way historical and cultural contexts are built, upon the growing body of evidence provided by each new site.

## Conclusion

The most important purpose of the *Management Plan for Delaware's Historical*

*Archaeological Resources* is to provide a management framework for Delaware historical archaeology based on a research plan. Archaeologists in the state are just beginning to apply the *Plan*, as we have seen, in designing research programs for individual sites, in developing sampling strategies for projects in which large numbers of identified sites must be tested and evaluated, and in evaluating the significance and National Register eligibility of sites.

The *Plan's* second purpose involved identifying the state historic preservation program's priority management needs related to Delaware's historical archaeological resources. In the *Plan*, these needs generated recommendations for a five-year program addressing preservation planning, identification, evaluation, registration, and treatment. The five planning projects call for developing historic contexts specific to historical archaeological resources. Geographic, temporal, and thematic parameters define each context, and several factors contributed to the selection of these contexts as priorities:

- 1) Agriculture and Rural Life in Delaware, 1830–1940. Current large-scale cultural resource management projects in Delaware are faced with identifying, evaluating, and treating large numbers of 19th- and early 20th-century rural sites, principally farmsteads.
- 2) The Impact of the Technological Revolution: Incipient Industrialization and Scientific Agriculture in Delaware, 1770–1830. Agriculture and rural life after 1830 cannot be completely understood without establishing the background of the crises and developments in the agricultural economy and way of life dating from the late 18th and early 19th centuries. Furthermore, this is the only context proposed in the *Plan* that would focus on the 1770–1830 time period.
- 3) Delaware, 1630–1730. Settlement models suggest many of the earliest historical archaeological sites are located in those areas most threatened by development and erosion. In addition, least is known archaeologically of this period of Delaware's history, and few sites dating between 1630

and 1730 have yet been identified.

4) Maritime Economy and Life in Delaware, 1630–1940. Coastal and riverine erosion as well as development pressures pose serious threats to the preservation of the state's historical archaeological maritime resources.

5) Nucleated Communities in Delaware, 1630–1940. While cultural resource management projects currently pose little threat to the state's historic nucleated communities, private development is threatening the archaeological integrity of downtown areas, and Delaware's agricultural hinterland cannot be fully understood without reference to these communities.

The recommended identification, evaluation, registration, and treatment projects grow naturally out of these historic contexts. Annual reconnaissance surveys (identification) have been proposed for priority threatened areas of the state, to build on the Atlantic Coast and Drainage surveys funded for several years by the Delaware State Historic Preservation Office with monies from the National Park Service's Historic Preservation Fund. The proposed surveys would focus on locating and identifying maritime sites and sites dating to 1630–1730 and would be accompanied by programs of documentary research. Annual intensive surveys (evaluation) of sites dating to the 1630–1730 period have also been proposed, and the *Plan* further recommends that all surveyed sites determined eligible for the National Register of Historic Places be nominated (registration). Finally, treatment plans are needed for all nominated and registered sites of the 1630–1730 period.

The State Historic Preservation Office and the University of Delaware Center for Archaeological Research have already taken steps to implement these recommendations through the Office's Survey and Planning Grant program. Through this program, National Park Service Historic Preservation Fund monies are subgranted to institutions and organizations that match the grant for a particular project on a 50/50 basis. On the following projects, the Center for Archaeological Research is the grant recipient and is providing the match necessary

to complete the projects. Preparation of an historic context on Agriculture and Rural Life, 1830–1940, has been funded for Fiscal Year 1991. It will address New Castle and Kent counties; through a Fiscal Year 1992 Survey and Planning Grant the context for Sussex County, 1770–1940, will be developed. The Atlantic Coast and Drainage reconnaissance surveys have been continued for Fiscal Years 1990 and 1991. A reconnaissance survey of portions of the Christina River and White Clay Creek drainages, both loci of early historical settlement in northern Delaware, has also been funded for Fiscal Year 1991. A Fiscal Year 1992 grant will fund a reconnaissance survey of the eastern end of the Appoquinimink Creek in southern New Castle County, another locus of early historical settlement.

Efforts to better understand, manage, and preserve Delaware's historical archaeological resources continue to progress. When the *Management Plan* was prepared, only 257 historical archaeological sites appeared on the state's inventory; the Atlantic Coast and Drainage reconnaissance survey of Baltimore Hundred (Fiscal Year 1990) alone located another 158. Including sites identified through other projects, the total has now reached 480. Nevertheless, this number compares to a total of 1,958 inventoried prehistoric sites and roughly 25,000 inventoried standing structures; all of the latter may potentially have associated archaeological resources. The idea of even testing all these potential sites to verify the survival of archaeological remains is staggering, to say nothing of the historic-period sites at which no standing structures survive. And identifying sites is only the beginning of the preservation process. Yet at least it is a beginning, and in cultural resource projects across the state, archaeologists are moving from identification, to evaluation, to data recovery or in many cases even to preservation in place.

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