

draft special resource study

Park/Field Area/WASO Review — August 1996

NEW JERSEY SHORE OF THE DELAWARE BAY NEW JERSEY

This draft study has been prepared to provide Congress and the public with information about the resources in the Delsea region study area in New Jersey and how they relate to the criteria for becoming a unit of the national park system. These criteria have been applied by the professional staff of the National Park Service. Publication and transmittal of this study should not be considered an endorsement or a commitment by the National Park Service to seek or support either specific legislative authorization for the project or appropriations for its implementation. Authorization and funding for any new commitments by the National Park Service will have to be considered in light of competing priorities for existing units of the national park system and other programs.

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New Jersey boasts a broad range of natural and cultural features and retains a surprising balance of urban and rural settings. Despite the proximity to Philadelphia, New York, and the growing Northeast metropolitan corridor, New Jersey's lower Delaware River and bay coasts remain relatively undisturbed. New Jersey has historically acted as a conduit for the growth of its metropolitan neighbors, which represent a market for agricultural and industrial products. Geographer Charles A. Stansfield Jr. offered the corollary that New Jersey is a microcosm of the United States — with features indigenous to its own industrialized north and agrarian south. It is a unique symbiosis founded on the interaction of land and water.

Through the late 19th century, inhabitants of Salem, Cumberland, and Cape May Counties depended upon the water for food, employment, transportation, and energy. Fishermen, whalers, and oystermen gathered shellfish from the salty river beds, and goods and produce were transported to Philadelphia markets via boat.

With the arrival of the railroad, 200 years of dependence upon water travel was drastically reduced. The railroad fueled local prosperity until the early 20th century when the many industries founded on natural resources began to decline. In addition, an increasing number of automobiles, commercial trucks, and the highways on which they traveled decreased the dependence on rail and waterways. The combined impact has left South Jersey an isolated, economically static region dependent upon agriculture, tourism, and remnants of once-prosperous maritime and industrial activities. For this reason a variety of cultural and natural resources remain intact, and others continue to quietly sustain a long and important tradition of agriculture, maritime, and industrial pursuits. (Paraphrased from *Historic Themes and Resources within the New Jersey Coastal Heritage Trail* [NPS 1991]).

SUMMARY

BACKGROUND

In 1988, Public Law 100-515 established the New Jersey Coastal Heritage Trail Route and directed the National Park Service (NPS) to inventory all natural and cultural resources in New Jersey that are generally east of the Garden State Parkway from the Sandy Hook Unit of Gateway National Recreational Area south to Cape May and west along the Delaware Bay to Deepwater. This area was later subdivided into regions based on geography and major resources. The southernmost Delsea region covers 450 square miles, encompassing western Cape May and southern Cumberland and Salem Counties. This area is inhabited by people and wildlife that depend on the vast tributaries, estuaries, and freshwater wetlands and watersheds.

PURPOSE

The purpose of this special resource study is to evaluate the Delsea region's resources for possible inclusion in the national park system using the requirements set forth in the NPS publication *Criteria for Parklands* and NPS *Management Policies*. For inclusion, an area must meet criteria for national significance, suitability, and feasibility. An additional way to evaluate the level of significance of the resources being considered for inclusion is to see how they apply to particular NPS themes. These themes are listed in *History and Prehistory in the National Park System* and the *National Historic Landmarks Program*. The study outlines three management strategies based on private, local, state, and federal ownership and local values.

PUBLIC INVOLVEMENT

The study of the Delsea region began in 1993 with reconnaissance surveys, research, and data

collection. Public meetings, as well as meetings with federal, state, and local agencies, have occurred since 1993. A draft national significance statement was completed in 1995 and sent to the NPS Washington Office for review; they concurred that the area was nationally significant, thus clearing the way for the next steps of determining suitability and feasibility. Public focus group meetings were then held in late 1995 by the National Park Service to solicit comments and discuss options based on information in the significance statement. Comments and additions from these meetings have been incorporated into this document.

SIGNIFICANCE

The study area represents the only estuarine system in the Atlantic Coastal Plain and in the national park system that was formed by glacial processes that drowned a major river to form a bay — instead of being formed by a barrier island(s). In this region many biogeographic provinces come together, resulting in overlapping habitat types and high biodiversity. The region's forests, tidal wetlands, swamp forests, and other habitats are home to one of the largest concentrations of endangered and threatened species on the Atlantic Coast. No other nationally recognized areas in the Atlantic Coastal Plain address the estuarine/salt marsh complex as completely as the study area. These facts, combined with the fact that the area is North America's second largest shorebird migration site, makes the area's natural resources nationally significant.

The salt marsh and estuarine environments of the study area also provided a setting where cultural diversity is extensive. The landscapes of the study area reflect the cultural influence of Native Americans and the original European settlers including Swedes, Finns, Germans, British, and the Dutch as well as later

SUMMARY

settlements by African-Americans, Jews, and Eastern Europeans. The study area would be one of the first national park system units predicated on the NPS "American Ways of Life" theme and would represent six subthemes — slavery and plantation life, farming communities, ethnic communities, consumer society of the 20th century, domesticity and family life, and occupational and economic classes. In fact, it would be the first unit to represent more than three of the "American Ways of Life" subthemes.

The established settlements as well as the natural resources and cultural diversity of the study area present an exceptional combination of resources that reflect the region's developments over a period of 300 years and its integral part in a national context. There is no other area known that has superior or more comprehensive resources to interpret (tell the story of) this American cultural landscape than the New Jersey shore of the Delaware Bay.

SUITABILITY

Based on site studies and other research, the study team concluded that there is no other area in the national park system that (1) comprehensively interprets the nationally significant elements of the "American Ways of Life" theme in this type of setting, (2) accomplishes this interpretation in an area that contains a microcosm of the American cultural landscape, and (3) contains internationally renowned natural resources. Evaluated under NPS new area criteria, this study found that the resources in the Delsea region are nationally significant and meet the NPS criteria for suitability.

FEASIBILITY

Given the national significance of the area, the need for long-term conservation and preservation of the resources, the public enjoyment potential, and the current amount of public ownership, the study area would make an

excellent and feasible example of a cooperative national park unit — a partnership park. The presence of a nationally recognized area would assist in the preservation and conservation of natural and cultural resources and provide substantial economic benefits to the local and regional economies.

MANAGEMENT CONCEPTS

Three concepts for managing, preserving, and interpreting significant natural and cultural resources in the study area/Delsea region have also been developed. The concepts range from a continuation of current methods of operation with no new federal initiative to the creation of a new national park system unit. New additions to the national park system will not usually be recommended if other arrangements can provide adequate protection for the resources and opportunities for public enjoyment. Proposed partnership options include alternatives for varying levels of protection and interpretation and of federal government involvement. The concepts for management are summarized below.

CONCEPT A: CONTINUATION OF EXISTING CONDITIONS

Under this concept, the National Park Service would not actively participate in the preservation or interpretation of the area's resources. The focus of this concept would be on the study area's natural resources and independent actions by local and state governments and nonprofit organizations.

Although there would not be any new impacts as a result of implementing this concept, the resources of the area — especially the cultural resources — might not be consistently interpreted or preserved.

CONCEPT B: NEW JERSEY SHORE OF THE DELAWARE BAY NATIONAL HERITAGE AREA

Under this concept, the National Park Service would provide technical assistance under the authority of national heritage area legislation to supplement initiatives by local, state, and regional entities. An important element of the heritage area should be planning assistance or funds to develop a regional plan for interpretation and protection of the resources. A strategically located visitor center, developed by non-NPS entities, would facilitate resource protection and interpretation. The interpretive emphasis of this concept would focus on the education and dissemination of information about the cultural resources of the area. The preservation and interpretation of historic resources would continue to be addressed through state, local, and private efforts. The natural resources would continue to be preserved and interpreted through existing programs. The designation of the area as a national heritage area would secure a 10–15 year involvement by the National Park Service as a contributing partner.

This concept would provide a unified approach to the understanding and interpretation of the Delsea region's landscapes and resources. National heritage area designation would be a positive impact because increased grants and technical assistance would help support the preservation and conservation of natural and cultural resources.

CONCEPT C: DELSEA MEADOWS NATIONAL BAYSHORE — A PARTNERSHIP PARK

Under this concept, two options have been developed. Option C-1 proposes the creation of a national park system unit comprised of scattered natural and cultural resources with three county-based visitor contact stations. NPS operation and management would occur at the visitor facilities and at a few key natural and

cultural areas owned by the National Park Service. Cooperative agreements and memorandums of understanding would define arrangements with specific non-NPS sites useful to the overall interpretive program. Brochures would direct visitors interested in exploring the region.

Option C-2 would create a core area where more unified resource preservation and interpretation would be possible with limited NPS ownership. The National Park Service would acquire significant resources from willing sellers. The focus of this option would be on the integrated interpretation of various significant cultural landscapes. A visitor center would be located near the junction of State Route 55 with either State Route 47 or State Route 49 along with visitor contact stations in Bridgeton and Salem. Interpretive programs throughout the area would be offered and promoted under NPS coordination. As under the option C-1, cooperative agreements and memorandums of understanding would define arrangements with specific non-NPS sites and programs useful to the overall interpretive program.

Both options of this concept would enhance the preservation and interpretation of the area's resources through NPS ownership of significant sites. Although the visitor center and contact stations would provide visitor orientation and resource interpretation, the construction of these facilities (if necessary) could have adverse impacts on natural resources.

THE NEXT STEP

Although each concept is described as a distinct plan, any implementing legislation or further plan may combine elements of some or all of the options. Any NPS involvement in the study area in the form of national park system unit designation, funding, and/or technical assistance, other than through existing programs, would require congressional action.

SUMMARY

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CONTENTS

INTRODUCTION	1
BACKGROUND AND PURPOSE	1
DESCRIPTION OF STUDY AREA	2
PUBLIC INVOLVEMENT	4
1993 Public Meetings	4
1993 Cultural Landscape Workshop	4
1995 Meetings	4
NATIONAL SIGNIFICANCE	7
OUTSTANDING EXAMPLE OF A PARTICULAR TYPE OF RESOURCE	7
Natural Resources	7
Cultural Resources	9
EXCEPTIONAL VALUE OR QUALITY IN ILLUSTRATING NATURAL AND CULTURAL THEMES	16
Natural Resources	16
Cultural Resources	18
SUPERLATIVE OPPORTUNITIES FOR RECREATION, FOR PUBLIC USE AND ENJOYMENT, OR FOR SCIENTIFIC STUDY	19
HIGH DEGREE OF INTEGRITY AS A RELATIVELY UNSPOILED RESOURCE	20
COMPARABILITY TO OTHER CULTURAL LANDSCAPES (WITH A FOCUS ON CULTURAL RESOURCES)	21
Significant Elements of the Delsea Region	21
Similar and Comparable Landscapes	21
Similarities to and Differences from Other Regions	23
Integrity	24
SUITABILITY	25
Natural Resources	25
Cultural Resources	26
FEASIBILITY	28
ADEQUACY OF CONFIGURATION FOR PUBLIC USE	28
ADMINISTRATION, STAFF, AND COSTS OF OPERATION AND DEVELOPMENT	28
LANDOWNERSHIP AND ACQUISITION COSTS	28
OPPORTUNITIES FOR THE LOCAL ECONOMY	29
TRANSPORTATION AND ACCESS	29
THREATS TO THE RESOURCES	30
CONCLUSION	30
MANAGEMENT CONCEPTS	32
VISITOR EXPERIENCE GOALS AND INTERPRETIVE OBJECTIVES	32
ONGOING RESOURCE PRESERVATION EFFORTS IN THE STUDY AREA	33
ESTIMATED COSTS	33

CONTENTS

CONCEPT A: CONTINUATION OF EXISTING CONDITIONS 34

- General Description 34
- NPS Involvement/Role 34
- Local Role 34
- Visitor Experience and Interpretation 34
- Resource Preservation 34
- Boundary 35
- Landownership 35
- Facility Development 35
- Preliminary Cost Estimates 35

CONCEPT B: NEW JERSEY SHORE OF THE DELAWARE BAY NATIONAL HERITAGE AREA 35

- General Description 35
- NPS and Local Roles / Partnership Management 36
- Visitor Experience and Interpretation 36
- Resource Preservation 36
- Boundary 37
- Landownership 37
- Facility Development 37
- Preliminary Cost Estimates 37

CONCEPT C: DELSEA MEADOWS NATIONAL BAYSHORE — A PARTNERSHIP PARK 37

- Option C-1 37
 - General Description 37
 - NPS Role 38
 - Local Role 38
 - Visitor Experience and Interpretation 38
 - Resource Preservation 38
 - Boundary 38
 - Landownership 39
 - Facility Development 39
 - Preliminary Cost Estimates 39

- Option C-2 39
 - General Description 39
 - NPS Role 39
 - Local Role 40
 - Visitor Experience and Interpretation 40
 - Resource Preservation 41
 - Core Area Boundary 42
 - Landownership 42
 - Facility Development 42
 - Preliminary Cost Estimates 42

IMPACT TOPICS 48

DERIVATION OF IMPACT TOPICS 48

- Natural Resources 48
- Historic Resources 48
- Socioeconomic Resources 48
- Visitor Use and Experience 48
- Impacts on NPS Operations 48

IMPACT TOPICS DEFERRED FOR FUTURE ANALYSIS 48

- Wetlands 48
- Floodplains 49
- Threatened and Endangered Species 49
- Archeological Resources 49
- Ethnographic Resources 49

APPENDIXES 55

- A: NATIONAL SIGNIFICANCE STATEMENT — NEW JERSEY SHORE OF DELAWARE BAY BY BERNARD L. HERMAN 57
- B. THE SIGNIFICANCE OF THE DELSEA REGION: A REPORT PREPARED FOR THE NATIONAL PARK SERVICE BY PETER O. WACKER 83
- C: INVITEES TO PUBLIC MEETINGS 110
- D: ECONOMIC IMPACTS OF DELSEA NATIONAL PARK BY DOUGLAS RAE 111
- E: FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN NEW JERSEY 126

MAPS

- Delsea Study Area 3
- Public Ownership 43

TABLES

- 1: Concept Comparison 44
- 2: Environmental Consequences 51

INTRODUCTION

BACKGROUND AND PURPOSE

The National Park Service (NPS) became interested in studying the resources of the New Jersey shore of the Delaware Bay during the initial planning and development of the New Jersey Coastal Heritage Trail Route (hereafter called the New Jersey Coastal Trail in this document) in 1990. In 1993 the New Jersey shore of the Delaware Bay was designated as a high priority for a special resource study — the first step in evaluating the area as a possible addition to the national park system. Such a study is a fact-finding effort to determine if a resource is nationally significant, suitable, and feasible to include in the national park system, the applicability of the resources being considered to the NPS themes, and the degree of existing protection. If the Delsea region met the criteria for significance, suitability, and feasibility, the study was to further determine appropriate management strategies based on private, local, state, and federal ownership and local values.

The Delsea region — as the southern Cumberland and Salem Counties and western Cape May County area became known as during the New Jersey Coastal Trail study — was the area studied in this special resource study (see Delsea Study Area map). This region consists of a remarkably intact natural resource base with significant cultural landscapes (defined below) that illustrate use and adaptation by different populations over a span of more than 300 years.

During planning for the New Jersey Coastal Heritage Trail, there was also considerable interest expressed by many in establishing "anchors" for each end of the trail. The anchors were envisioned as important resources that would be interpreted (telling the region's stories) and managed by the National Park Service and/or a consortium of federal, state, and local entities. The southern anchor would be within the Delsea region.

Interest in preserving the Delaware Bay and its associated wetlands on the New Jersey side of the estuary has been expressed by numerous local, state, and federal agencies. The New Jersey Conservation Foundation, New Jersey Audubon, Citizens United to Protect the Maurice River and its Tributaries, Natural Lands Trust, The Nature Conservancy, the U.S. Fish and Wildlife Service, and the U.S. Environmental Protection Agency are some of the organizations that are actively studying and protecting resources in the Delaware Bay region.

There is much discussion in this document about the significance of the Delsea region's cultural landscape. For purposes of this document, a **cultural landscape** is defined as a geographic area, including both cultural and natural resources that have been influenced by or reflect human activity. For example, the Southern Tidewater building traditions and land use patterns (including maritime traditions), the New England farmsteads and land divisions, as well as the mid-Atlantic Quaker brick farm plantations are all distinct cultural landscapes found in the Delsea region.

In most areas of the eastern seaboard where similar resources and patterns have flourished (for example, the Chesapeake Bay), this relationship has been obscured, diluted, and even displaced by several factors, including a massive economic and social shift to coastal recreation activity, second-home development in lieu of agriculture, the conversion of towns and communities to serve the tourism industry, and the development of an economic base unrelated to local resources. None of these things has occurred extensively in the Delsea study area; it has remained fairly isolated from the urban development and the modern intrusions.

The National Park Service finds that the region is nationally significant for its natural resources and for its integrity as a cultural landscape. The Park Service also determined that the study area meets

the NPS criteria for suitability and feasibility and that it represents many elements of the "American Ways of Life" theme as well as natural resource themes.

Because the study area was determined eligible for inclusion in the national park system, the second part of this document presents management concepts for ways to preserve the area's heritage and provide a destination for regional and national visitors. As a result, it may also provide an economic stimulus to the local and regional economies.

DESCRIPTION OF STUDY AREA

The Delsea study area (about 288,000 acres or 450 square miles) includes the New Jersey shore of the Delaware Bay from Cape May north and west to Deepwater, New Jersey, including major portions of Salem, Cumberland, and Cape May Counties (see Delsea Study Area map). This area includes tributaries, estuarine and freshwater wetlands, uplands, watersheds, and coastal residential communities. It does not extend to the deeper open waters of the estuary. The inland limit is State Route 49.

The Delaware Bay is one of the nation's most important and productive estuaries; it was added to the U.S. Environmental Protection Agency's National Estuary Program in 1988. Although the area around Philadelphia and Wilmington, north of Delaware Bay, is highly populated (about 5.8 million) and industrialized (the second largest petrochemical center in the United States), the Delaware Bay's distinctive wetland system encompasses vast stretches of relatively undisturbed salt marshes. Many different cultural landscapes are associated with these wetland resources. An aerial perspective provides the best way to truly comprehend the vastness of this system.

Not to be lost in the following discussion is the conclusion that the natural resources of the study area are, alone, nationally significant. However, it is the natural resources woven into the context of

the cultural landscape that appears to present the most intriguing possibilities for public enjoyment, interpretation, and resource preservation.

The study area's salt marsh and estuarine environments provide a setting where a variety of cultural expressions are possible and where examples of cultural diversity are extensive — e.g., Southern Tidewater building traditions and land use patterns including maritime traditions, New England farmsteads and land divisions, and the mid-Atlantic Quaker brick farm plantations. The landscapes and features of the study area reflect the physical cultures of Native Americans and the original European settlers including the Swedes, Finns, Germans, British, and the Dutch, as well as later settlements by African-Americans, Jews, and Eastern Europeans.

The features found in the study area characterize the evolution of a number of historic vernacular landscapes that reflect the northwest European heritage of much of the United States. One of several specific types of cultural landscape, vernacular landscapes are defined as landscapes that illustrate peoples' values and attitudes toward the land and that reflect patterns of settlement, use, and development over time. These landscapes are found in large rural areas and small suburban and urban districts in the Delsea study area. Examples of these landscapes include agricultural areas, fishing villages, mining districts, homesteads, and colonial settlement architecture in houses of worship and farm buildings (such as barns, canneries, diked fields). The mix of resources and features provides a starting point to learn about landscape patterns and attendant values in American life from initial aboriginal settlement to the mid-20th century.

The time span and cultural diversity of the Delsea study area present an exceptional mix of resources that describe regional development in a national context. These resources provide a starting point to learn about larger patterns and values in American life from Native American inhabitation to the first periods of European settlement to the rise of environmental and cultural awareness.

Delsea Study Area map

PUBLIC INVOLVEMENT

1993 Public Meetings

To initiate the special resource study, public meetings and workshops were held in 1993. The study team also met with several federal, state, and local agencies. The purpose of these meetings and workshops was to identify those resources that the public believes are important and should receive additional consideration for management, protection, or interpretation. The comments that were expressed include the following:

The local residents are concerned about the area's natural and cultural resources and its way of life, which reflects a continuum of use of over a span of 300 years. They value the area's rich mixture of cultures and traditions, which they feel is important and perhaps unique to their rural communities;

They recognize that loss of industry has brought significant economic problems to their communities. They would welcome increased interest and visitation, with its positive economic consequences, but not at the expense of the very resources that make the area so special.

They acknowledged that some of the area's cultural resources and "stories" have already been lost — much like losing the region's collective memory. They are anxious to consider ways of preserving communities and traditions to help stem that loss.

They feel that the region's cultural communities and patterns are just as fragile and changing as its natural ones — and that care is needed to preserve and interpret both.

They suggested that a unifying focus needs to be developed for the area to showcase its unique resources while at the same time respecting them. The significance of those resources, perhaps taken for granted by residents, must be made more apparent to visitors and residents alike.

They requested assistance and education — rather than regulation and directives — to help their local communities protect and interpret their vital cultural and natural resources.

1993 Cultural Landscape Workshop

To assist the NPS study team in defining and evaluating the potential national significance of the cultural landscapes in the Delsea region, a cultural landscape workshop was conducted with participants from federal, state, and local agencies as well as academia. The participants concluded that the region contains significant cultural landscapes. Based on research and the papers of Dr. Bernard Herman, University of Delaware, and Dr. Peter Wacker, Rutgers University (see appendixes A and B), a national significance statement for the Delsea region was prepared. This statement of the area's significance gave credence to the determination that the landscape and resources of the area, and the preservation and continuing use of those landscapes and resources, make the area nationally significant.

1995 Meetings

In December 1995 a series of three special invitational focus groups and an open public meeting were held to present the National Park Service's findings to interested people and groups in the Delsea region and to explore their interest in possible future management concepts. The three focus groups included representatives from a variety of agencies, environmental and preservation organizations, and governmental entities (see appendix C). There was an additional briefing for state officials in the New Jersey Department of Environmental Protection.

In describing the resources of the study area, a number of focus group participants commented on the vastness and wildness of the extensive tidal saltmarsh wetlands in the region, which surprise visitors not expecting such undeveloped areas in the Northeast megalopolis. However, it was noted that the wetlands may not be as striking as a

mountain range or the Grand Canyon but represent a more subtle landscape. Unlike other areas where urbanization is encroaching, this area retains a relationship between human life and the natural resources such that the past is part of everyday life.

Somewhat contrary to expectations, a number of participants suggested that the project area for any future involvement should be expanded to include additional resources. The New Jersey Division of Fish, Game and Wildlife, for example, expressed the view that the project area should have been extended to Cape May Point because of the important natural resources. There were concerns about the ability to control visitation should some form of regional park effort be implemented so that the resources would not be overused and so that local residents and infrastructure not be affected negatively. Others suggested that dramatic change was coming to the region and that one major issue was the ability to manage that change without altering the character of the experience or the visual nature of the region.

However, there was little enthusiasm for a traditional national park in which the federal government would own and manage extensive tracts of land. The Pinelands National Reserve was cited as an example of a bureaucracy imposing zoning in a manner that would not be acceptable. Some participants argued for the lowest level of government involvement possible. However, a number of people thought that local preservation efforts would not succeed if left solely to local initiatives.

Instead, there was support for the National Park Service acting as a coordinator and facilitator for a regional partnership effort because it was felt that no other existing group or agency had the means or ability to lead such a broad cooperative venture. One view that was suggested was that the Park Service could "paint the *regional* vision" and establish a list of issues for individual communities. The potential for some form of state-based or national heritage area was discussed.

The desirability of technical assistance was expressed by a number of individuals. Under this concept, a regional effort might work to identify resources and needs for access and preservation and move toward educational efforts. A suggestion was made that the National Park Service could initiate a program to assist communities (especially chambers of commerce and municipal organizations/agencies) in identifying their relationship to the value and benefits of conservation and historic preservation and the implications of their choices. It was also discussed that success could be partially based on educating the local communities about the economic and entrepreneurial benefits of a regional effort.

Participants expressed the view that there were opportunities for tourism, conservation, and economic development to work together, especially if development could be focused in urban areas and make redevelopment possible and viable.

The role of educating local residents as well as visitors was emphasized as a means of creating awareness and supporting resource protection, although it was thought that coordinating the timing and scale of such efforts would be critical in managing development. Some believed that a broad effort to promote both natural and cultural resources would disperse visitation and appeal to residents and visitors not interested solely in either natural or cultural resources. The need to cultivate a local consensus and develop a strategy to feature the area was suggested, perhaps in coordination with the New Jersey Coastal Trail.

In the December 1995 meeting with New Jersey Department of Environmental Protection officials, several people reiterated the local concerns about outside control, whether from the state or federal level. About 90% of the shoreline in the region is protected by governmental agencies or nonprofit organizations, and significant additional areas continued to be targeted for acquisition and protection. It was suggested that one goal of open space preservation in the region was to protect the local way of life and economic viability of the

INTRODUCTION

region, and that linking the heritage and natural resource communities could enable the groups to assist each other.

Officials acknowledged that, when compared to natural resource protection, cultural resources in the area receive less attention and that there is a need to bring additional recognition to these resources. Some suggested that the state or local governments or other entities continue to focus on

natural resource protection while the National Park Service might take the lead on cultural landscape and historic preservation issues by focusing on cultural resources and promotion. Contacts should be made with the Office of State Planning to integrate ongoing planning of the two initiatives, although it was important to realize that coastal areas and wetlands subject to Coastal Area Facility Review Act (CAFR) regulations may not be included in the state plan.

NATIONAL SIGNIFICANCE

The National Park Service has developed criteria to evaluate the national significance of an area. These criteria, listed in the National Park Service's *Management Policies* and in the NPS publication *Criteria for Parklands*, state that a resource will be considered nationally significant if it meets all of the following requirements:

- It is an outstanding example of a particular type of resource.
- It possesses exceptional value or quality in illustrating or interpreting the natural or cultural themes of our nation's heritage.
- It offers superlative opportunities for recreation, public use and enjoyment, or for scientific study.
- It retains a high degree of integrity as a true, accurate, and relatively unspoiled example of resources.

The following discussion assesses both the natural and cultural resources of the study area in relation to each of these four national significance criteria. This assessment shows the interrelationships that contribute to what is believed to be a nationally significant example of a combination of vernacular cultural landscapes. These landscapes are significant examples of the broad historical cultural mosaic of the United States. These landscapes and features therein are not generally sufficiently significant by reason of historical association or artistic merit to warrant individual recognition; however, collectively they compose an entity that outstandingly illustrates a way of life. The evaluation was assisted by the research and academic reports prepared under contract to the National Park Service by architectural historian Dr. Bernard Herman of the University of Delaware's Center for Historic Architecture and Engineering and cultural geographer Dr. Peter Wacker of Rutgers University. These reports are contained in appendixes A and B.

The integrity of the cultural resources and their relationship to the development and use of the land and environment vary. Fields, woods, and

marsh are defined by cultural resources that show integrity of location, design, setting, materials, workmanship, feeling, and association. The integrity of individual historic properties, however, is linked and amplified by the overall integrity of the cultural landscape. Assorted resources reflect significant historic and cultural activity in a mix that blends different time periods and property types in a harmonious whole. Each criteria is discussed individually below.

OUTSTANDING EXAMPLE OF A PARTICULAR TYPE OF RESOURCE

Natural Resources

In 1992 the Ramsar Convention (or Convention on Wetlands of International Importance) recognized the Delaware Bay and its surroundings as wetlands of international importance. About 79,650 acres of wetlands in New Jersey are officially listed by the convention. The Delaware Bay satisfied several convention criteria for this distinction, including (1) a wetland of special value as the habitat of plants or animals at a critical stage of their biological cycles, (2) a wetland that supports an appreciable assemblage of rare, vulnerable, or endangered species or subspecies of plants or animals, or an appreciable number of individuals of any one or more of these species, and (3) a wetland of special value for maintaining the genetic and ecological diversity of a region because of the quality and peculiarities of its flora or fauna or because it is of special value for its endemic plant or animal species or communities.

The Delaware Bay is a strategically located feeding and resting area for up to 20 species of shorebirds, primarily sanderling (*Calidris alba*), red knot (*C. canutus*), ruddy turnstone (*Arenaria interpres*), and semipalmated sandpiper (*C. pusilla*). As much as 90% of the red knots that migrate east of the Mississippi River can be found on the Delaware Bay during the peak migration.

These species winter in Central and South America. More than a million shorebirds use the Delaware Bay during their spring migration to the Canadian Arctic. In terms of sheer magnitude, there is not a single natural event anywhere on the entire East Coast that comes close to rivaling the shorebirds' Delaware Bay arrival. Only one other locale in the western hemisphere, the Cooper River Delta in Alaska, outnumbers the Delaware Bay during spring migration. But unlike Alaska, the bayside beaches of New Jersey are readily accessible to biologists, birders, and curious visitors who in recent years have turned out in increasing numbers to witness the event. The governors of New Jersey and Delaware jointly named the bay a shorebird reserve in the mid-1980s as part of the Western Hemisphere Shorebird Reserve Network created by the International Association of Fish and Wildlife Agencies, in cooperation with the World Wildlife Fund of the United States.

The success of the migration and continued survival of the shorebirds that use the New Jersey shore of the Delaware Bay is dependent on a distinctive feature of this estuary. At about the same time that the shorebirds arrive in the region in search of food to fuel the continuation of their northward migration (an additional 3,000 miles), thousands of horseshoe crabs (*Limulus polyphemus*) crowd the study area's sandy beaches and shallows to breed, just as they have for the past 250 million years. This is the largest concentration of horseshoe crabs in North America. Twice a day, low tides expose wet sand, making the crab eggs accessible to flocks of birds that descend to forage on the protein source.

Other examples of this rich biodiversity include the following:

- Federally designated species found within the study area include the bald eagle (*Haliaeetus leucocephalus*) and peregrine falcon (*Falco peregrinus*). During the past 10 years, peregrine sightings have undergone a fivefold increase, and bald eagle sightings have doubled. Migrating and wintering eagles use the extensive marshes for hunting and the wooded swamp and critical edge habitats for roosting. The study area contains the two most heavily used wintering bald eagle sites in New Jersey (Dennis Creek and Maurice River). Parts of the study area have long been identified as the last remaining suitable habitat for the bald eagle in the state. The greatest concentration of wintering eagles sighted in the Delaware Bay occurred recently, and most observed wintering eagles were juveniles, which demonstrates the study area's importance for recovering eagle populations.
- The Cape May peninsula is renowned for its spectacular concentrations of birds during spring and fall migrations. Because of its unique configuration and geographic location along the Atlantic Flyway, thousands of songbirds, raptors (15 species), and woodcock (*Philohela minor*) are funneled through Cape May during the fall migration. Hawk and falcon numbers reach some of the greatest densities observed in the mid-Atlantic region. The Delsea study area's upland edge is also a critical migratory bird corridor in the fall.
- The estuary serves as a spring staging area for as many as 200,000 snow geese (70% of the snow geese that use the Atlantic Flyway), including populations that winter in Virginia and North Carolina. The estuary annually winters about 15 species of waterfowl, a population of 500,000.
- There are more than 100 species of finfish relying on the estuary as a feeding, spawning, and/or nursery ground. Of these, about 40 are important as commercial or recreational species (e.g., weakfish, bluefish, flounder, and menhaden); the rest are important ecologically and may serve as indicators of the health of the ecosystem. American shad (*Alosa sapidissima*), Atlantic sturgeon (*Acipenser oxyrinchus*), and alewife were historically important anadromous species.
- The tidal portion of the Maurice River and associated wetlands have been identified as the most important habitat for rails in the mid-

- Atlantic region. Wild rice marshes along the river are probably the reason. These marshes are the most distinctive habitat in the study area and contain the largest continuous wild rice stands in the entire state.
- A recent study found that the Maurice River area, in general, is believed to support 53% of the animal species that the state has recognized as endangered, not including marine mammals. In addition, habitats in this area support 38% of the state's threatened animal species.
 - In Cumberland County, there are 147 occurrences of 58 different state-designated rare plant species. Of these, 31 are considered endangered by the state. Sensitive joint-vetch (*Aeschynomene virginica*), New Jersey rush (*Juncus caesariensis*), and chaffseed (*Schwalbea americana*) are considered candidates for federal listing. Of these three, the occurrence of the sensitive joint-vetch along the tidal Manumuskin River is particularly important because this is the largest viable population left in the world, probably containing the greatest genetic diversity for this species.
 - The Great Cedar Swamp, within the study area, consists of large undisturbed stands of Atlantic white cedar (*Chamaecyparis thyoides*). The swamp is also a significant area for rare, threatened, and endangered plant species. Five federal candidate species exist or most likely exist in this large undisturbed wetland: swamp pink (*Helonias bullata*), glade spurge (*Euphorbia purpurea*), Boykin's lobelia (*Lobelia boykinii*), Barratt's sedge (*Carex barrattii*), and pine barren reed grass (*Calamovilfa brevipilis*). Swamp pink is expected to be listed as a threatened species in the near future. New Jersey represents the only remaining stronghold of this plant in the United States. Several plants listed by the state as threatened or endangered also occur in the swamp. Botanists expect that with additional investigation other unusual species will be identified.
 - The study area has been identified as high-quality habitat for at least five amphibian species that are considered threatened at the state level. The diversity of reptile and amphibian species is higher in the study area's watersheds than in any other watersheds in New Jersey. This diversity is attributed to the excellent water quality, the freshwater wetlands, and the undisturbed nature of the area. Given the current rapid decline in amphibian species worldwide, the study area may be important as a genetic refugium and as a monitoring and indicator site for amphibians.
- The Maurice River system, and perhaps portions of the Cohansey River, are arguably the most pristine and scenic rivers in the mid-Atlantic region. The Maurice River is a national scenic and recreational river. Detailed studies of flora, fauna, and water quality on other major river corridors, such as the Cohansey River, would likely document a resource quality similar to that found for the Maurice River. Portions of the Maurice River system, especially several of its tributaries (including the Manumuskin River and Menantico Creek), have water quality indicative of a completely undisturbed natural river system (as defined by state water quality standards). Water quality for most of the study area approaches the quality of these two water bodies.

Cultural Resources

The study area contains pristine and historically significant cultural resources that reflect the evolution of vernacular landscapes in the context of the National Park Service's "American Ways of Life" theme. (An additional way to evaluate the level of significance of the resources being considered for inclusion is to see how they apply to particular NPS themes. These themes are listed in *History and Prehistory in the National Park System and the National Historic Landmarks Program*.) The history of these landscapes can be divided into a series of five distinct but overlapping historic periods presented below.

Formative Landscape Traditions (Aboriginal) — pre-1640. The Lenape (Delaware) Indians occupied parts of New Jersey, Pennsylvania, Delaware, and New York for centuries before European settlement. The Unami and Unalachtigo tribes lived in central and southern New Jersey, with the Unalachtigos living in semipermanent villages in what is now Salem, Cumberland, and Cape May Counties. Although permanent villages were a rarity, the Lenape founded most of these settlements along major waterways, especially the Delaware River. Travel from these settlements to villages and camps required the pioneering of travel routes, which resulted in permanent travel corridors used in the European settlement of the area.

The Lenape relied heavily on the resources of the land for their subsistence. They practiced tree girdling and slash-and-burn techniques to clear land to domesticate crops such as corn, cranberries, and squash. Many of these crops were later adopted by the European settlers. The European immigrants who settled in the area learned much from the tribes that had lived on the land. It was a formative period that resulted in the development of certain lifestyles and land manipulation. The Nanticoke Lenni Lenape is a state-recognized Native American tribe that is concentrated in the Bridgeton area where the tribe maintains a social service and cultural agency. The tribe has a petition pending for federal recognition.

Within the Delsea study area, evidence of continuous Native American presence includes numerous archeological sites (many are already known) as well as historical settlements that are still inhabited by Lenape people, such as Gouldtown. Furthermore, the region is well known for producing superb decoy carvers, a skill originally learned by Europeans from Native Americans.

Formative Landscape Traditions (European Settlement) — 1640–1720. The Swedish and Finnish occupation of the lower Delaware Valley and their contributions had implications for the settlement of much of the United States east of the

steppe grasslands (P. Wacker, see appendix B). However, few aboveground resources are left in the study area except for the late 17th century Caesar Hoskins log house in Mauricetown, Cumberland County. Although this log house has been severely altered, remnants of the typical Finnish construction (where entry is at the gable end and not opposite the gable end like the precedence set by the British) are exemplified.

The late 17th century arrival of Quaker, Baptist, and other English-speaking groups into the province of West Jersey brought the first wave of permanent settlement. Evidence of the land settlement patterns is apparent in the remaining structures. One colonial building tradition most closely associated with the study area is the pattern-end brick architecture, with most surviving examples dating from 1720 to 1780. Architectural and social historians have determined that the pattern-end houses of the study area are one of the most distinctive of America's early architectural traditions. Pattern-end houses in the study area are the architectural expression of a regional building style that is without parallel in colonial America (B. Herman, see appendix A). According to one noted pioneer in the study of the cultural landscapes of eastern North America, referring especially to Salem County, "the more intricate patterns [of the bricks] can be matched nowhere else in America" (P. Wacker, see appendix B).

The other architectural style of importance in the study area is the New England frame house found in Cumberland and Cape May Counties. The New England frame houses are the remains of the 17th century settlement of several southern New Jersey communities by religious dissidents from elsewhere in the American colonies. Baptists and Quakers migrated from areas of coastal Rhode Island and Connecticut during the 1680s and reestablished themselves along the Delaware River and Bay. Dominant among these communities is the area of present-day Greenwich, Cumberland County, where several frame houses dating from the late 1600s remain standing. The architectural characteristics observed in these buildings, however, have a level of significance beyond their illustration of resettlement migration

within the American colonies; framing techniques seen in their earliest form in these buildings became the foundation for a larger regional building style (B. Herman, see appendix A). By the mid-18th century, framing details including the use of shouldered posts and trenched common purlin roofs were in use on both sides of the Delaware Bay. Thus, the New England frame houses of the study area are examples of a process of cross-cultural communication between different settlement groups as revealed in their earliest architectural traditions.

Other building styles are represented by lesser-known Dutch, Scandinavian, and German contributions. Taken individually, any one of these traditions is distinctive and significant to understanding the development of regional architectural styles and broad patterns of cultural history in a formative historic landscape. Truly distinctive, however, is the combined presence and visual impact of all these traditions in the same geographic area. The study area reflects in microcosm the larger significance of the middle Atlantic region during the age of settlement (B. Herman, see appendix A). The siting and construction of dwellings in the region reflect ideas about domestic organization. Through shared details and the practice of commemorative detailing, the patterns of kinship and religious and class associations are evident in ways not seen in other early American cultural landscapes.

Early on, the affluent farmers on the Delaware River and its tributaries and the bay began diking the tidal marshes. Diking had been introduced in the region by the Dutch after 1655, but it was not commonly practiced until the arrival of the relatively affluent English Quakers in the late 17th century. The technology spread but was not adopted by the more conservative New Englanders of northern New Jersey until after the Revolution.

Diking established especially rich meadows and pasture devoted to the production of European perennial grasses, which replaced the less valuable American annuals. In 1885 D. M. Nesbit of the U.S. Department of Agriculture issued a special report indicating that New Jersey's Delaware Bay

and its tributaries contained some of the more prominent reclamation projects nationwide. Nesbit credited such land along the Maurice River as the most fertile of its kind in the United States — from which other parts of the country could learn. From the late-19th to the mid-20th century, a lack of cooperation among marsh owners and new government regulations put an end to many reclamation projects throughout the country, and few examples remain. The Burcham farm, along the Maurice River, is one of the last remaining dike farms in New Jersey and dates back more than 100 years. Farmed as it has been through its history, the farm retains its historic elements and significance.

Salt hay farmers also continue to use marshlands in South Jersey along the Delaware Bay and its tributaries. Despite mechanization, many of the principles behind the modern harvest of salt hay are the same as they were during the colonial period.

An Emerging Regional Landscape — 1710-1790. The houses of worship and associated burial grounds found throughout the study area clearly represent a cultural landscape. These buildings reflect a wide variety of Protestant faiths — ranging from early Quaker meetinghouses to African Methodist Episcopal churches. As a functionally related group of historic properties, houses of worship in the study area are significant in their representation of religious tolerance and freedom of expression from the periods of colonial settlement through the early national period (B. Herman, see appendix A).

The meetinghouses and churches of the study area function on three levels:

First, in their construction and architectural detail, the houses of worship continue the building traditions found in the early dwellings associated with the first period of initial durable settlement. . . . Second, if the houses, brick and frame alike, represented an initial visual organization of the landscape, the houses of worship provided a common architectural point of reference which

strengthened and communicated a regional landscape character. Third, the churches are significant in the ways in which they connect across denominational lines and describe common values derived from the symbolically richest structures on the landscape (B. Herman, see appendix A).

In addition to churches providing a solid anchor for the settlement of the area, business and industry began to develop and provide a financial basis. Successful American glassmaking began in the study area early in the 18th century, and the techniques used here diffused north to other parts of New Jersey and elsewhere in North America. The sand, forests, navigable waterways, and proximity to the deepwater port at Philadelphia made this region ideal for glassmaking. Functional items, especially bottles and window glass, have historically been the industry's staple products. In the past, the glasshouses operated from September to June, closing during the hottest months. Farmers and fishermen found seasonal employment in the glasshouses. An excellent example was the glassworks at Wistarburgh (1739–79), termed by the curator at the Wheaton Village Glass Museum as one of the most successful glassworks in colonial America.

Before the demise of the works, glassmakers familiar with German methods had moved a little north of the Delsea study area to establish additional works. Many of the early methods of the industry were taken elsewhere by those seeking less expensive and more reliable long-term energy sources than could be provided by the south Jersey forests. The demise of Wistarburgh came with the Revolutionary War. Although the Wistarburgh glassworks closed, its success, coupled with abundant natural resources, encouraged other factories to operate here. Almost a century later, Salem boasted four glassworks. The early glassmaking techniques were refined and eventually led to several innovations, including a reliable air-tight fruit jar that was a benefit to the later canning industry. Although the Mason jar (developed elsewhere) became the most widely used, efforts in the Delsea study area led to a patent in 1858. Glassmaking remained a major

industry in southern New Jersey well into this century.

The Landscape of Agricultural Use — 1780-1870. The dramatic reshaping of the landscape for agricultural uses that occurred from the early- to mid-19th century and well into the 20th century continues to characterize the study area today. The range of activities includes the cultivation of different crops, the reclamation of wetlands for agricultural use, and the industrialization of the countryside both in terms of food processing and transportation. Readying the land and facilities for agricultural uses such as farming, food processing, and shipping the food required a change in the landscape. The range of property types associated with these different agriculture-related uses are exemplified in mid-19th century drive-through granaries found on farms throughout the area as well as the dikes of the salt hay meadows. Although certain individual property types, such as barns or field patterns, provide a starting point for a discussion on the effects of agricultural uses, only an understanding of the total agricultural landscape conveys its complexity. The multiple overlays of ethnic settlements through the late 19th and early 20th centuries produced a number of distinctive rural communities tied to the area's agricultural economy. Two phases in this period underscore the region's significance.

Phase 1 — The first agricultural phase, extending from the early 19th century through the Civil War, was defined by the cultivation of grains such as wheat and corn, as well as livestock husbandry and the early development of orchards. The dominance of grain and cattle (both beef and dairy) to the agricultural economy is clearly represented in the many 19th century agricultural buildings that stand in the region. The most common farm buildings are drive-through granaries. As a regional building form, the drive-through granaries appear to have developed on the Delaware side of the river around 1820. By the 1850s, this type of granary was a common fixture on southern New Jersey farms.

The other agricultural building type most closely associated with this time period is the bank barn,

which is a bi-level design with an upper level runway that is reached via a raised earth embankment. This design incorporated all the functions of the farm under a single roof, with hay mows, grain storage, and crop processing above and animal stalls and milking parlors below. In comparison, the drive-through granaries and multipurpose large barns describe a market-oriented agriculture focused on the cultivation and export of grain, butter, and beef. The use of agriculture described through the property types associated with these activities is shared throughout the lower Delaware Valley, but only in the Delsea study area and increasingly scattered areas of Delaware's southern New Castle County and adjacent Maryland have these mid-19th century farm buildings survived in an undeveloped agricultural context (B. Herman, see appendix A).

Phase 2—The second phase of significance in agricultural uses, extending from the Civil War through the Great Depression, is represented by a fundamental shift in the kinds of crops cultivated. With the collapse of eastern grain markets in the post-Civil War years and the relocation of the American milling industry to the upper Midwest, farmers in the Delaware Valley confronted a period of declining farm income and farm values. The opening of the railroads throughout the Philadelphia backcountry and the rapid growth of urban populations during this period provided the farmers of the Delsea study area the opportunity to grow new, more perishable crops. Peaches, strawberries, blueberries, cucumbers, tomatoes, peppers, sweet potatoes, and other fruits and vegetables were widely cultivated for rail export to regional urban markets. Truck farming and dairy products continue to play a significant role in the study area. Truck farming consisted of growing vegetables and fruits that were taken to urban markets in Philadelphia, New York, and elsewhere by horse-drawn wagons, the railroad, and later trucks. In the first two decades of the 20th century, South Jersey became the largest truck-farming area in the state. The primacy of Philadelphia in the region and the decline of the colonial ports, such as Greenwich, tended to make southern New Jersey a relatively isolated place, suited for agriculture.

Overall, the second phase of the use of agriculture in the study area produced three distinct phenomena: highly specialized farm building types such as sweet potato houses; food processing facilities exemplified by canneries; and a new generation of rural housing. This rural housing was characterized by the appearance of migrant labor housing, the appearance of new agricultural settlements (which were often associated with the arrival of new immigrant groups like Jews, Italians, or Ukrainians), and the substantial growth of rural villages (which were usually in conjunction with rail lines) (B. Herman, see appendix A). The use of agriculture that is reflected in the buildings and landscape features of this new, rapidly changing agricultural countryside was a process that was repeated all along the middle Atlantic and northeastern seaboard. What distinguishes the agricultural landscapes of the Delsea study area, however, is their sustained viability (B. Herman, see appendix A).

The agriculture of the area, as well as the waterways of the region, provided a foundation for developing industries. The abundance of locally grown produce spurred the development of the area's canning industry and, in turn, advanced the science of food preservation. In 1795 Nicholas Appert endorsed the use of glass containers as most resistant to air and the need to sterilize them in boiling water before filling. This paved the way for successful experiments with food preservation including: (1) the invention in 1887 of a new mechanized closure process that revolutionized the canning industry; (2) the invention at the turn-of-the-century of a new can that overtook the industry (the unsoldered unit, called a "sanitary" can, that differed from its predecessors by its rubber-sealed coating instead of a gasket and double seams); and (3) the invention by Charles Seabrook of Seabrook Farms of a quick-freezing process that is still in use by frozen food companies. The latter, although just outside the study area, still had rather profound implications for the continuing importance of agriculture and the canning support industry in South Jersey. In addition, Abbotts Dairy (1872) realized the need to ship milk in the area without spoiling, and through experimentation, it was discovered that

milk stored in an ice house would remain cool elsewhere by wrapping the milk cans with insulation jackets. Eventually, Abbotts Dairy devised a system of cooling and aerating milk.

Once the refrigeration problem was solved, Abbotts Dairy turned to preventing the theft of milk in cans and providing a continuous supply. The first was corrected by the invention of the safety top and seal, the latter when the dairy established a receiving plant in Mannington Township, Salem County.

Furthermore, the founding of the Ferracute Machine Company in Bridgeton during the Civil War era is an event of potential national significance. This company, established originally in 1863 as a machine shop (P. Wacker, see appendix B), grew into a company that specialized in improving sheet metal presses. The records of this company list customers from all over the world, including Australia, China, and Bolivia. The remnants of the manufacturing operation remain, and a local group is advocating preservation.

According to maps of the railroad network of the period, the corridor between New York and Philadelphia developed railroad connections rapidly. By 1860 there was little other development in southern New Jersey except for a link from Camden to Atlantic City to accommodate vacationing Philadelphians. Over time, within the study area, additional rail lines connected Millville to Glassboro, a line was in progress between Camden and Bridgeton, and a line was planned to run between New Brunswick and Salem. Four other lines were completed over the next 17 years. These rail links were not only significant in encouraging economic development but also in encouraging the development of ethnic enclaves within the study area. Indeed, one scholar has referred to the area as an "ethnic archipelago" based partially on railroad destinations (P. Wacker, see appendix B).

The expansion of the railroad brought settlers to the area, and some interesting changes in population patterns occurred. Censuses in the 18th

century show that less than 5% of the population in the study area were African-Americans, although they had been in the area since the 17th century. By 1810, however, the African-American population in southern New Jersey was highest along the shore area. The Quaker populated areas of southern New Jersey and Salem County, in particular, were refuges for fugitives from slavery.

African-American communities with distinctive origins and settlement patterns are still in the area. While early African and African-American residents of Cape May County were whalers and free slaves, the first residents of Whitesboro were shareholders from North Carolina and Virginia. The African-American communities in the Port Norris area originated as seasonal destinations of maritime workers from coastal Maryland and were not established as permanent settlements until the 1920s. Whitesboro, on the eastern edge of the study area, was a planned African-American township that was established shortly after the turn-of-the-century. An important social institution and cornerstone of these communities are the churches and religious institutions of assorted denominations. These resources, along with several historic African-American cemeteries, offer insight into the religious beliefs and needs of these communities.

Other communities of immigrants settled in the area. Although most of the older ethnic enclaves were immediately north of the study area, three overlap into the study area or are just outside the study area boundary. Jewish agricultural colonies were established in several states, but they made great contributions in the settlement of southern New Jersey. Many of the immigrants established themselves in the area in response to a wave of anti-Semitism in Europe. The impact of the Jewish settlements on agriculture was especially notable in regard to the scientific development of poultry and egg production. Vineland, for example, became known as the "egg basket" of the East. The oldest of these settlements were the Russian Jewish agricultural settlements that were established in the late 19th century. One of these settlements, Woodbine, is entirely within the study area. Woodbine was the largest and most

important of these settlements and, in 1903, became the first incorporated all-Jewish municipality in the United States. Another first was the founding of the Baron de Hirsch Agricultural School, the first secondary agricultural school in the United States.

Two other major ethnic settlements are just outside the study area. The Seabrook community was the first Japanese community established in the eastern part of the country. About 2,500 people were relocated, largely to a hastily built village at Seabrook Farms, from the World War II relocation camps that were established to house U.S. citizens of Japanese origin. The Estonian community began five years after the arrival of the Japanese and for the same purpose — to provide agricultural labor for Seabrook Farms.

Another group, the Italian migrant labor force, was the foundation of New Jersey's agricultural labor force until after World War II. As early as 1931, Italians were employed in the agricultural business through the *padrone* system. This system allowed unemployed Italians to work under a sponsor, or a *padrone*. Of the small number (5%) of Italians that were employed in agriculture-related jobs, 95% of those people had been born in Italy. In the area, Italians had established commercial fruit and vegetable farms by the turn of the century and recruited labor directly from Italy, as well as from Philadelphia, Camden, Trenton, and Delaware through the *padrone* system. Italian farms are still prevalent in the Vineland and Port Norris areas.

The Cultural Landscape of River and Bay — 1850–1950. The cultural resources associated with the period from the 1850s to the 1950s continue to dominate impressions of the study area today. The most distinctive resources associated with this period are those that reflect the livelihood provided by the Delaware River and Bay. Ranging from the oyster fleet sailing out of Bivalve and Port Norris to the hunting, fishing, and trapping communities along and between the Delaware's many tributaries, the maritime cultural resources directly address the relationship between human occupation and natural environment.

In the 19th century, shellfish became an important resource along the estuary. The center of Delaware estuary oystering was always in the study area because the Maurice River towns had the best rail connections and the oyster beds were the most extensive off Egg Island and East Point. Bivalve sprang from a tiny settlement to a booming oyster packing and shipping town as hundreds of schooners sailed out of the Maurice River. Bivalve oysters were even shipped to the western United States in ice-cooled railcars.

Once the oyster industry escalated and modernized, the Chesapeake Bay schooner was modified to adapt to the Delaware's strong tides and shallow waters. By the 1870s, the Delaware Bay schooner had taken on its own unique characteristics. Increased length of hull lines, a freeboard with a long sweeping sheer line, and smaller heart-shaped sterns with elliptical tops characterized the New Jersey adaptation of the Chesapeake schooner. Existing schooners predate 1930, the last year they were built. The oldest extant schooner built with sails and refitted with a power engine is the *Cashier*, believed to date to 1849.

Maritime communities with similar combinations of occupational and natural resources are not uncommon along the Eastern seaboard, but the state of preservation, diversity, and vitality of the study area in this regard is distinctive. Perhaps the most distinguishing characteristic of the marshland economy is its resilience and viability. One contradiction to this is the fishing industry. The oyster trade, for example, developed during the 19th century to its prime at the turn of the century and provided economic stability for the region during this time. However, a combination of pollution, over fishing, and natural disease caused its decline and virtual demise.

Today, oystering on the Delaware is a difficult pursuit with limited returns. In other oystering communities, such as those associated with the Chesapeake Bay, the decline of the fishery is equated with cultural loss; the typical tone of discussion is of decline and decay. However, the situation along the Delaware is different. No one

contests the decline of the oyster industry, but few support the view that there is a corresponding loss of a way of life. Rather, most residents would argue that their efforts simply have been redirected into other maritime pursuits such as fishing, trapping, and some turtling. Today, all that basically remains of the industry are the buildings associated with of the once flourishing oyster industry that included the towns of Port Norris, Bivalve, and Shellpile.

Still, there is a key distinction to be made between open water fishing (like oystering) and inshore trapping and fishing. The range of property types identified with marshland and inshore fishing are among the most distinctive associated with the study area (B. Herman, see appendix A). Shad and sturgeon skiffs, sneak boxes, boatyards, trapping marshes, chandleries, sail lofts, floating cabins, and a host of other small craft and work sites are all tangible resources that embody the character and significance of the cultural landscapes of river and bay. An example of one property type, the floating cabin, introduces several qualities that define the significance of study area.

As a property type, the floating cabin represents a unique regional response to a complex seasonal cycle of marshland work and harvest similar to the seasonal cycles identified by Mary Hufford with the New Jersey Pinelands National Reserve. . . . [T]he floating cabins were pulled up in floating villages along the edge of the Delaware marshes. Anchored in what were known as scow dives, the floating cabins were part of a landscape ensemble which included a flimsy wharf and the shad skiffs used in the actual fishery. . . . The seasonal parameters of the floating cabin ensemble are enlarged even further when we consider their use as housing for hunters in the fall and early winter, muskrat trappers during the winter months, and the taking of turtles, terrapins, and sturgeon during the spring and summer (B. Herman, see appendix A).

The floating cabins of the late 19th and early 20th centuries now occupy a different landscape

ensemble — one that reflects the celebration and preservation of regional consciousness. Pulled up on blocks behind houses or beached on the berm of a dike, the floating cabins symbolize a shifting relationship between the residents of the study area and their environment. The cabins became a physical reflection of human adaptation to the environment and the subsequent formation of certain cultural landscapes. Over time, these cabins have become symbolic of the maritime way of life and are an expression of regional identity. The 20th century economy did not end the relationship between people and the bay and river, but the economy did shift it in other directions that revolved around smaller-scale and more profitable pursuits. Other examples include the transformation of trappers to bird-watching guides and the use of housing built for migrant labor in the oystering industry by today's migrant farm workers.

EXCEPTIONAL VALUE OR QUALITY IN ILLUSTRATING NATURAL AND CULTURAL THEMES

Natural Resources

Natural History in the National Park System and on the National Registry of Natural Landmarks (NPS 1990) and *History and Prehistory in the National Park System and the National Historic Landmarks Program* (NPS 1987) outline a thematic framework for evaluating natural and cultural areas as potential new units of the national park system. The study area represents the following natural themes:

"Oligocene — Recent Epochs"

There is the opportunity to illustrate and interpret the paleogeographic sequence of the Delaware estuary. The vast Laurentide ice sheet advanced across North America to northeastern New Jersey 17,000 years ago. At that time, sea level was about 130 meters below the current level, and the coastal plain extended to near the outer edge of the existing continental shelf. The Delaware estuary then was a freshwater river flowing to a delta up to 75 miles to the east of

the current estuary. By 11,000 years ago, sea level had begun to rise, accompanying the melting of the continental glaciers. As more of its shores were inundated, the ancestral estuary migrated farther landward. The climatic setting would have been like that from Maine to Labrador.

The recent observation that rates of sea level rise have increased dramatically over the last few decades and the resultant effects that this rise would have on the estuarine wetlands and adjacent uplands are other excellent interpretive opportunities.

"Eastern Deciduous Forest"

There is the unusual opportunity to interpret this theme via the general habitat classification of "Large, Undisturbed Wooded Swamp." This habitat is composed of three hydric forest subtypes around the Maurice River — hardwood swamp, white cedar swamp, and pitch pine lowland forest. The three forest types occur in a mosaic that usually finds white cedar stands along watercourses, red maple in the floodplains, and pitch pine in drier areas. However, the differences in elevation are so slight that these general areas intermingle in convoluted patterns, which commonly include islands of upland mesic forest.

The most important aspect of this habitat is size. The large sections of swamp forest allow certain species to thrive that cannot use the same habitat when it is reduced to tens of acres. The reasons for this phenomenon are complex, vary from species to species, and are not always understood by ecologists. Because forest fragmentation is so widespread in the northeast, interior forest species are becoming increasingly rare because "edge" species invade their habitat. The lack of forest fragmentation and diminished edge habitat in the study area is important to preserve while providing field classroom opportunities to discuss the basics of biodiversity.

"Marine Environment — Tidal Salt Marshes"

The vast, uninterrupted stretches of relatively undisturbed to pristine tidal salt marshes are the primary reason this theme is interpretable in the study area. Second, tidal salt marshes are among the most productive natural ecosystems in the world; they should be understood so that they can be left undisturbed, both structurally and functionally. Third, salt marshes occur up and down the Atlantic coastal plain; however, those marshes in the southern part of the coastal plain, while functionally similar, are structured differently. There are subtle to large differences in dominance patterns, community structure, and species composition. Concomitant with these marsh changes are changes in the wildlife. Fourth, salt marshes are used by many of our most important open ocean commercial fish species as nursery grounds and sometimes as breeding areas. There is a great opportunity to link the importance of habitats that, to the untrained observer, do not seem critical to species survival.

"Estuaries"

There are several major estuaries in the United States scattered throughout the Atlantic coastal plain and four other coastal natural regions. The study area shares many characteristics with these others, but is exceptional in several ways. One way is that the shoreline here is extremely flat, lacking the bluffs and rapid rise of landscape found so extensively along the Chesapeake Bay. Because of this, there is a great amount of the bayshore consisting of tidally flooded saltwater marshlands that extend inland for miles. These marshlands are traversed extensively by relatively free-flowing, tidally influenced rivers and streams and backed by the transitional brackish and freshwater wetlands that complete the habitat spectrum of an estuary. In literally dozens of locales, the study area's shore offers this whole spectrum in a relatively undisturbed condition with relative ease of access (for example, traveling up the Cohansey or Maurice Rivers),

and thus offers exceptional opportunities to interpret this theme.

"Streams — Slow Meandering Streams"

The study area provides textbook examples of tidally influenced, slow meandering streams. For example, from a high point just southwest of Millville, the Maurice River flows over ground that slopes toward the bay at an average of 8 feet per mile, with a slope of 0.15% (or five times flatter than a tennis court).

Generally, the land rolls in wide, nearly imperceptible ridges and U-shaped valleys down to the flat marsh fringe of the bay. The low relief causes the watercourses in the lowlands to meander slowly through their wide floodplains. The main channel of the Maurice in the study area is nearly 21 miles long, although the linear distance along its route is only 12 miles. In the marsh, the meanders become so convoluted that they eventually cut themselves off, creating a new, shorter main channel and a remnant oxbow that gradually silts in to form new marsh.

Also exceptional is the dependency that migratory shorebirds have on the horseshoe crab. Very few natural areas anywhere in the United States or overseas possess such a clear example of a critical ecological relationship. This dependency presents an outstanding and rare opportunity to communicate specific and broad concepts about dependency of wildlife on scarce natural resources. The horseshoe crab is classified as a keystone species, an ecological concept that explains how certain biological communities are structured. Further, this example can increase awareness of how key resources from one nation are important to species that migrate long distances and demonstrate how significant natural resources can be shared by and are essential to more than one country.

Cultural Resources

The cultural resources of the study area apply to the themes of "Architecture" and "Development

of the English Colonies, 1688–1763." However, the study area resources best represent the "American Ways of Life" theme.

This theme treats the social structure of people within the territory of the United States. Included are the lifeways of various strata of the American people over time. Here are assigned areas depicting in representative fashion significant economic, social, occupational, regional, ethnic, and religious groups. (NPS 1987, pg. II-24)

Of the 10 subthemes under "American Ways of Life," the following six subthemes are represented and therefore interpretable within the study area — farming communities, slavery and plantation life, industrial towns, ethnic communities, domesticity and family life, and occupational and economic classes.

The cultural resources of the study area are significant under the primary theme of "American Ways of Life" and the two secondary themes of "Architecture" and the "Development of the English Colonies, 1688–1763." The "American Ways of Life" theme celebrates the distinctive social structures of American communities and regions as they are represented through resources such as architecture, landscape, and material folk culture. The study team identified three areas of historic activity that best represent the distinctive qualities of the region through the primary theme of "American Ways of Life": agriculture, maritime, and food processing. The common thread that binds these historic activities to the "American Ways of Life" theme is the relationship between human occupation and the natural environment. These relationships, characterized in surviving cultural resources, span the entire period of the study area's historic occupation, and they consistently reflect the continuous cultural diversity of the region. The multicultural aspect of the region, however, should not be read in terms of a "melting pot." The study area is a region with many simultaneously expressed culturally distinct groupings.

As a topic that illustrate the theme of "American Ways of Life," the architecture of the study area characterizes ideas about settlement of the area and domestic organization through the siting and construction of dwellings. The pattern of kinship and religious and class association are evident in ways not seen in other early American landscapes. The process that shows the integration of landscape ensembles to form a regional identity is a distinguishing feature of the study area.

As a group of related buildings, pattern-end brick houses provide a significant example of the early use of permanent materials and artistic detailing in the construction of dwellings. The use of expensive and difficult to obtain materials, such as brick, and the use of decorative techniques became examples of permanent settlement in the area. These resources illustrate the "American Ways of Life" theme in terms of domesticity, family life and agricultural communities. With their prominent display of dates and initials, the pattern-end houses are expressions of wealth, kinship, and social status in an early agricultural community. The houses stand as the monumental signatures of families whose descendants continue to occupy the area. The dated houses are concentrated in the period from 1720 to 1750 or the second full generation of permanent English settlement. Consequently, the houses reflect the economic rise of Quaker planters and the resulting permanent settlements and the formation of certain landscapes.

Although pattern-end brick houses tell part of the story of the Quaker plantation system, the other part, which may be more important from a national perspective, is that these permanent communities contributed to the early establishment of rural, "free" black communities in a border state that became instrumental for many fleeing slavery in Delaware and Maryland. These communities probably predate others that served a similar purpose; some are still African-American communities with historic buildings and other landscape elements intact. Later, the presence of these settled areas, at least indirectly, made it possible for affluent African-Americans to establish a resort community in Salem County that

was active until the 1940s (some of which also remain standing).

The key element in relating houses of worship to the "American Ways of Life" theme is their reflection of an emerging regional culture in an atmosphere of religious tolerance. The churches and meetinghouses have architectural details and congregational histories that make them eligible for listing on the National Register of Historic Places at the level of local and state significance. Taken as a group, however, these structures hold a much higher degree of importance. Few, if any, other 18th and early 19th century cultural landscapes in the eastern United States have the tangible resources to illustrate and describe such a basic tenet of our national culture — the freedom of belief and religious expression — with such diversity and integrity (B. Herman, see appendix A).

SUPERLATIVE OPPORTUNITIES FOR RECREATION, FOR PUBLIC USE AND ENJOYMENT, OR FOR SCIENTIFIC STUDY

The study area does not offer, and does not really have the potential for offering, the same sort of open-coast seashore recreation that dominates most of the eastern seaboard. What the study area does offer is a quiet, contemplative alternative to the rush of typical seashore recreation.

The opportunities for the public use, enjoyment, and scientific study of cultural resources in the study area are diverse and enormous. The residents of the area have long celebrated their diverse cultures in many ways, such as open-house tours, seasonal celebrations, and local historical collections. The need for more intensive study through archeology, architectural history, local history, folklore, ethnography, and environmental history is apparent. Most important is that the residents of the study area are willing and able partners in the study, documentation, and preservation of their cultural heritage.

By interpreting the maritime, agricultural, and food-processing traditions of this area, visitors can learn about the lifestyles, customs, and fascinating physical evidence of the regional culture.

The opportunity to interpret an example of the interdependence of all species using the clear and obvious example of the shorebird's reliance on the horseshoe crab — is exceptional. Very few natural areas anywhere in the United States or overseas contain such a clear demonstration of this critical relationship. The number of migratory shorebirds that stop over in the study area on their semi-annual travels and the presence of resident waterfowl, raptors, songbirds, and the relict horseshoe crab provide the opportunity for diverse bird-watching, wildlife observation, hunting, and photography.

Although in the past, this area provided a wealth of fish and seafood for recreational and vocational pursuits, recently the yields have been greatly reduced due to overfishing, habitat degradation, and the presence of disease organisms. However, it appears that because of the attention given by government agencies, organizations, and the general public, the quality and quantity of recreational fishing is increasing. Sportfishing yields weakfish, hog chokers, windowpane flounder, and spot as well as crabs and clams.

Similar to the fishery resources, the hunting and trapping in the study area historically have yielded subsistence and commercially important harvests. Today, regulations allow minimal hunting of wildlife species for recreation. Hunters eagerly seek deer, otter, muskrat, rail birds, and snapping turtles. The hunting of these species represents the continuum of human dependence on the area's natural resources to provide sustenance and enjoyment.

The study area provides excellent scenic vistas for recreational driving, biking, hiking, and general public use and enjoyment. The numerous scenic vistas in the area include the open waters of the Delaware Bay, salt/freshwater marshes, rivers, upland forests, lakes, and ponds, as well as

agricultural fields and structures. Many towns and communities in the area, including Greenwich, Bridgeton, Salem, and Dennisville, as well as dispersed individual homes and farms, lack the 20th century intrusions and reflect an undeveloped character. The proximity of these natural and historic vistas to the eastern metropolitan corridor provides an educational and recreational opportunities.

There are also opportunities for hands-on scientific study. Currently, there is a need (1) to increase the knowledge about the vernacular landscapes and to understand and comprehend the overlapping and mosaic nature of these landscapes, (2) to understand the relationship of local habitat (and the horseshoe crab) to bird migration and its implications for other points on the globe that act as funnels for migrating species, and (3) to study the estuarine ecosystem and the impacts of human activities on this system. Previous studies include the effectiveness and secondary impacts of various mosquito control practices by Rutgers University, waterfowl and muskrat population analyses by the U.S. Fish and Wildlife Service and state wildlife management agencies, shellfish population ecology in relation to their freshwater tidal wetlands, and numerous studies undertaken in conjunction with the Environmental Protection Agency's National Estuary Program.

HIGH DEGREE OF INTEGRITY AS A RELATIVELY UNSPOILED RESOURCE

As a preamble to the following discussion, one of the most common reactions of a visitor to the study area is that the region is very different than one would expect within a hour's drive of an eastern seaboard megalopolis. Many things give the sense that very little has changed here:

- The lack of strip development, malls, and suburban tract housing.
- The proportion of continuously occupied, unaltered single-family dwellings, many of which were built in the 1800s.

- The wide stretches of agricultural land interspersed with farm buildings from a century or more ago.
- The coastal communities and riverbank docks and boatyards that, despite hard times in the fishing industry, have not disappeared or been altered to restaurant and trendy shop development.
- The dozens of small communities in which homes and public buildings have not been severely changed.

These impressions are not limited just to small pockets within the region; they are widespread. There is a sense that little has changed. However, although much of the area contains niches of resources that have not lost their natural or historical significance, some resources have lost their context through time and use.

The primarily extractive nature of European use of this landscape since the 1600s has altered the land and waterways. With dikes, large areas of salt marsh have been converted to dry land or freshwater marsh to support agricultural activities, in some cases facilitating the spread of exotic vegetation, such as the common reed (*Phragmites*). Ironically, much that once was cut, mined, or farmed has healed and now supports the animal and plant communities that are the focus of this study.

The extent of past disturbance varies throughout the region. Some large natural areas do exist where diking never took place or was naturally or deliberately removed. Additionally, large parcels are being restored to a functioning salt marsh. Some experts express optimism that this will eventually result in many areas returning to their prealteration condition. However, the shoreline, marsh, and upland habitats are still functioning well enough to support large shorebird, waterfowl, and songbird migrations and serve as important mid-Atlantic nursery grounds for commercially important fish species.

COMPARABILITY TO OTHER CULTURAL LANDSCAPES (WITH A FOCUS ON CULTURAL RESOURCES)

Significant Elements of the Delsea Region

The landscape of the study area is characterized by the following geological characteristics, settlement patterns, landscape traditions, and architectural forms:

- The isolation of the region bounded on the north by the Pine Barrens and on the east, south, and west by the Atlantic Ocean, Delaware Bay, and Delaware River, respectively.
- The concentrated presence of three American historic cultural landscape traditions from the 17th and 18th centuries (New England, Mid-Atlantic, and Southern Tidewater).
- The most intact examples of 18th century Quaker pattern-end brick architecture.
- Towns and villages that illustrate the Americanization and popularization of mid- to late-19th century Victorian vernacular architecture.
- The purity of representation of these rural and urban traditions with a minimum of 20th century intrusion.
- A bay shore comprised of low tidal marshes interspersed with small sandy beaches and tidal rivers, and a bay that is wide and shallow with numerous sand bars. Geographic features and latitude influence the biota inhabiting the region and, therefore, the opportunities for human use.
- Specialized agricultural techniques used to reclaim vast tidal areas for agricultural use.
- An economy with an emphasis on regional agricultural- and maritime-based activities that still reflects a natural resource base.
- The relatively complete absence of large urban centers and population concentrations in favor of numerous small towns and villages.

Similar and Comparable Landscapes

The study area is not unique in most of its individual elements. The maritime character of the

region is similar to numerous marsh, bay, and oceanside communities throughout the eastern United States. The lower eastern shore of Maryland, particularly in the Crisfield and Deal Island vicinity, exhibits comparable relationships between people and the natural environment. Similarly, the seaside communities along Virginia's eastern shore, the Outer Banks of North Carolina (especially Ocracoke Island), and the South Carolina low country near McClellanville all document the complex, constantly negotiated relationships between human beings and the environments in which they live and work. The distinctive nature of the Delaware Bay study area can be seen/elucidated, however, through some comparisons with a region like the Chesapeake Bay.

The Chesapeake Bay region was studied by the National Park Service (*Chesapeake Bay Study* 1993) to evaluate any potential role in programs and activities for restoration and conservation of the bay. In evaluating the four major criteria that must be met to determine national significance (in italics below), the study team concluded that:

1. As "the largest estuary in North America," the bay is an *outstanding example of a particular type of resource* that exhibits "a unique historic and modern human development pattern that is driven by the estuary's natural resources."
2. The bay *possesses exceptional value or quality in illustrating or interpreting natural or cultural history themes of our nation's heritage* by providing opportunities" for interpreting the interdependence of cultural and natural resources, not only in its modern condition but throughout the nearly 300-year period over which the bay has exerted an extraordinary influence on the course of United States history."
3. In spite of limitations on public access, the bay *offers superlative opportunities for recreation, for public use and enjoyment, and for scientific study* through the bay's open waters, tidal rivers, and dozens of parks,

reserves, greenways, and beaches in public or private foundation ownership.

4. The bay "continues to function as an intact estuary" with areas that "may be true, accurate, and relatively unspoiled representatives of the bay" and therefore, *retains a high degree of integrity as a true, accurate, and relatively unspoiled example of the resource that it illustrates.*

The Chesapeake study suggests that one unifying interpretive theme is the "relationship between human history and settlement and the bay's readily available resources: high-quality foods and accessible marine transportation." It discusses how the development of bay communities over time illustrates the influence of climate and geography on transportation routes, settlement patterns, and historic events; the role of soils in determining rural agricultural patterns; and the impact of human behavior on the bay environment. Potential specific themes include early English settlements in Tidewater, Virginia, the resource value of marshlands on the eastern shore of Maryland and relatively undisturbed river systems there and in Tidewater Virginia, and the maritime and commercial history and modern vitality of bay communities.

Although the Chesapeake and Delaware Bays include representation from important historic settlement patterns and similar natural resource areas, they are distinctly different in the current manifestations of those resources.

- **Architectural Traditions:** While the Chesapeake Bay represents primarily the single Tidewater architectural tradition, the Delaware Bay study area includes elements of the same Tidewater tradition and the New England and Philadelphia Quaker traditions. The Chesapeake Bay study clearly indicates that historic architectural traditions are represented in isolated pockets, whereas the Delaware Bay study area is more uniform in the broad presence of its architectural traditions.

- **Cultural Traditions:** In the Chesapeake Bay region, many of the surviving cultural traditions are nonmaterial, while the Delaware Bay retains a broad representation of both material and cultural traditions.
- **Impact of Modernization:** In large areas of the Chesapeake Bay, the historic character of the landscape has been lost to modernization and urban development, while the Delaware Bay region maintains a significantly more homogeneous and complete representation of cultural landscape traditions.
- **Current Economic Base:** Both the Chesapeake and Delaware Bay areas continue important and historic agricultural and maritime traditions. However, the Delaware Bay region is distinctly different in the broad reliance on natural resources for the region's economic base. This relationship is found only in isolated pockets in Chesapeake Bay. In the Delaware Bay region, greater proportions of the local economy and the people rely on land and water resources for employment.
- **Public Access:** The *Chesapeake Bay Study* reported that only about 1% of the bay's shoreline was available for public access. In contrast, most of the New Jersey shoreline in the study area is in some form of public or nonprofit ownership.

Clearly, the Delsea study area includes the same types of resources and opportunities for access and interpretation that were considered sufficient to establish the Chesapeake Bay as a nationally significant resource and, in fact, exceeds the Chesapeake Bay in the breadth, depth, and homogeneity of its resources.

Similarities to and Differences from Other Regions

The architecture of initial European settlement and the rise of distinctive regional landscapes are not unique to the study area. As noted above, the Chesapeake Bay region is characterized by

Tidewater architectural and settlement patterns, and the Massachusetts bays are characterized by New England traditions. In contrast to these areas influenced by a single primary tradition, the Delaware Bay's Delsea region includes the early colonial architecture of eastern New England, the diverse sectarian architecture of the Philadelphia hinterland, as well as Tidewater influences in some areas. These traditions are represented in distinct subregions as well as being blended in transitional zones.

The permanent and dramatic decorative use of brick and the emergence of a vernacular religious building tradition that combines shared architectural elements across distinct faiths distinguish the study area. In the same way, tangible resources related to the agricultural landscapes are found from northern New England to southern Georgia. Barns, field patterns, rural industries, agricultural villages, and historic transportation routes reflect a 19th and early 20th century national preoccupation with the desire for rural improvement and profit. In each locale, however, that desire tended to be expressed through a strategy that combined local custom with scientific reform. As a result, distinctive landscapes evolved from agricultural development and a market demand for the produce.

Other factors set the study area apart. First, the idea of landscape ensemble is central to the significance of the study area and its representation of the "American Ways of Life" theme (B. Herman, see appendix A). The ensemble concept describes a landscape composed of multiple elements that reflect different categories of significant historic activity within a relatively compact setting. The fact that four major chronologically and functionally distinct time frames related to the "American Ways of Life" theme exist with equal levels of visibility and accessibility in a definable area identifies the study area as a significant resource.

Integrity

At the level of individual properties, there are many overlapping resources between the study area and the area of southern New Castle and Kent Counties on Delaware's western shore. What is lacking in Delaware, however, is the overall integrity of the landscape derived by the cumulative elements. Moreover, suburbanization and the development of industry and transportation routes continue to erode Delaware's overall landscape integrity. The same is true of other coastal areas such as the Chesapeake Bay where traditional settlement patterns and uses of natural, maritime, and land-based resources have become isolated pockets among 20th century urbanization and development corridors.

This question of comparability returns to the hypothesis that (1) this way of life, diverse yet still closely tied to natural resources, is a scarce and significant historical contributor to the broad cultural mosaic of the United States, and that (2) central to the significance of the study area is the special mix of cultural and natural resources. The Delsea region of the Delaware Bay is nationally significant in its ability and opportunity to interpret in microcosm historic relationships with the natural resources and several settlement patterns that have influenced the development of other areas throughout much of the eastern half of the United States.

SUITABILITY

In addition to national significance, NPS management policies require that areas under consideration for inclusion in the national park system be evaluated for their suitability. The guidelines for suitability state that proposed new areas should represent a cultural or natural theme or type of recreational resource that is not already adequately represented in the system or is not comparably represented and protected for public enjoyment by some other land-managing entity. Adequacy of representation is determined on a case-by-case basis by comparing the proposed area to other units of the system for differences or similarities in the character, quality, quantity, or combination of resources, and the opportunities for public enjoyment.

Natural History in the National Park System and on the National Registry of Natural Landmarks (NPS 1990) and *History and Prehistory in the National Park System and the National Historic Landmarks Program* (NPS 1987) are frameworks that list themes considered to be of national significance, as well as national park system units (and national natural and historic landmarks) representing these themes. Not all themes are represented by the national parks or national landmark properties. Based on the previous analysis under national significance that used these frameworks, the study area represents the following natural and cultural themes: "Oligocene — Recent Epochs"; "Eastern Deciduous Forest"; "Marine Environment — Tidal Salt Marshes"; "Estuaries"; "Streams — Slow Meandering Streams"; "American Ways of Life"; "Architecture"; and "Development of the English Colonies, 1688–1763."

Natural Resources

The "Oligocene — Recent Epochs" theme is represented by 22 national park system units and one national natural landmark; the "Eastern Deciduous Forest" theme by 30 national park system units and 15 national natural landmarks;

the "Streams — Slow Meandering Streams" theme by 22 national park system units and two national natural landmarks; the "Architecture" theme by 39 national park system units and more than 100 national historic landmarks, and the "Development of the English Colonies, 1688–1763" theme by 17 national park system units and 90 national historic landmarks. However, within the Atlantic Coastal Plain Natural Region (the National Park Service breaks down theme representation by natural regions), the "Marine Environment — Tidal Salt Marshes" and "Estuaries" themes are not adequately represented. The NPS historical theme not fully represented is "American Ways of Life."

Only one national park system area in the Atlantic Coastal Plain is devoted almost entirely to the estuarine/salt marsh system (Timucuan Ecological and Historic Preserve). Eleven national park system units and nine national natural landmarks currently represent the "Marine Environment" theme, but three of the national park system sites are national monuments or national historic sites (Fort Pulaski and Fort Frederica National Monuments and Fort Raleigh Natural Historic Site) that are associated with this theme indirectly. The other areas are primarily national seashores (Assateague Island, Cape Lookout, Cape Hatteras, Cape Cod, Cumberland Island, and Fire Island National Seashores) or national recreation areas (Gateway National Recreation Area). Of the nine national natural landmarks, five are islands and three are beaches. These areas usually have limited land bases of salt marshes, are located primarily south of the study area (and hence have different species associations and community structures), and lack any international significance. Given the extent of the study area, it would be the best representation of tidal salt marshes in the Atlantic Coastal Plain, and one of the best in the national park system.

Nineteen national park system units and two national natural landmarks in the Atlantic Coastal Plain currently represent the "Estuaries" theme.

Similar to the case above, 12 of these units are national monuments or historic sites indirectly associated with the estuaries theme (Colonial National Historic Park; Fort Frederica, Fort Pulaski, Fort Caroline, George Washington Birthplace, and Fort Sumter National Monuments; Fort Raleigh and Thomas Stone National Historic Sites; Fort Washington and Piscataway Parks; George Washington Memorial Parkway; and Theodore Roosevelt Island). The other units are primarily national seashores or national recreation areas with associated estuarine systems formed via barrier islands (Assateague Island, Cape Hatteras, Cape Lookout, Cape Cod, Fire Island, and Cumberland Island National Seashores and Gateway National Recreation Area). The study area would represent the only estuarine system in the Atlantic Coastal Plain and in the national park system formed not by a barrier island(s) but from glacial processes that drowned a major river to form a bay. This, combined with the fact that the area represents North America's second largest shorebird migration site, increases the suitability of the study area.

Cultural Resources

There are about 17 national park system units and 53 national historic landmarks that represent one or more of the 10 subthemes —slavery and plantation life, farming communities, industrial towns, urban life, ethnic communities, industrial wealth of the last half of the 20th century, consumer society of the 20th century, suburban life, domesticity and family life, and occupational and economic classes — of the "American Ways of Life" theme. Only two national park system units (Green Springs National Historic District and Lowell National Historic Park) represent more than one subtheme; for these units the total number of subthemes represented is two and three, respectively, and include farming communities, industrial towns, and occupational and economic classes. With regard to the national historic landmarks, Williamsburg Historic District represents three subthemes (slavery and plantation life, urban life, and domesticity and family life), and Old Salem Historic District, Tudor Place,

Mount Vernon, Las Trampas Historic District, and Yucca Plantation each represent two subthemes (from among slavery and plantation life, farming life, industrial towns, ethnic communities, domesticity and family life, and occupational and economic classes). The study area would be one of the first national park system units or national historic landmarks virtually predicated on the "American Ways of Life" theme and would represent six subthemes (slavery and plantation life, farming communities, ethnic communities, consumer society of the 20th century, domesticity and family life, and occupational and economic classes). In addition, the "American Ways of Life" theme provides the context for understanding the evolution of American vernacular landscapes. Over time, the established settlements as well as the natural resources and cultural diversity of the study area present an exceptional combination of resources that reflects the region's developments and its integral part in a national context.

Within the study area, there is a significant percentage of the tidal salt marshes in public ownership (primarily state and other federal ownership) and, therefore, available for public enjoyment. However, there is no strong unified coalition working toward interpretation, education, and public awareness of the area. Because the study area is significant as a cultural landscape, the already extensive public ownership of tidal salt marshes is advantageous. Future NPS protection could focus on cultural sites with partnerships developed for aspects of the cultural landscape that encompass the tidal salt marshes and agriculture on adjacent uplands. This is important because there is little public ownership for cultural sites outside of the tidal salt marshes; therefore, most cultural sites are not adequately protected and are not available for public enjoyment.

Based on site studies and other research, the study team concluded that there is no other area in the national park system or national natural or historic landmark programs that (1) comprehensively interprets the nationally significant elements of the "American Ways of Life" theme and (2)

accomplishes this interpretation in a microcosm of the American cultural landscape containing internationally renowned natural resources. There is no other area known that has superior or more comprehensive resources to interpret this American cultural landscape than the New Jersey shore of the Delaware Bay. In addition, no other nationally recognized areas in the Atlantic Coastal Plain address the estuarine/salt marsh complex as completely as the study area.

The New Jersey shore of the Delaware Bay offers both outstanding cultural and natural resources that are interwoven to show the collective American experience in a relatively compact geographic area. With appropriate preservation and interpretation, these complex resources offer extensive potential for the appreciation and enjoyment of future generations.

FEASIBILITY

To be feasible as a new unit of the national park system, an area must be of sufficient size and appropriate configuration (considering natural systems or historic settings) to ensure long-term conservation of resources and to accommodate public use. It also must have potential for efficient administration at a reasonable cost. Important feasibility factors are landownership, acquisition costs, access, threats to resources, and staff or development requirements. Although some of these factors can be evaluated from existing data, others must be based on broad concepts. For example, long-range development and staffing costs must be based on past experience until a general management plan has been prepared and formal cost estimates can be determined by specific actions.

ADEQUACY OF CONFIGURATION FOR PUBLIC USE

The size and complexity of the study area make it impractical for management as a traditional national park (i.e., one where the National Park Service is the primary, if not total, landowner within the boundaries of the park unit). The current and probable future constraints on funding for acquisition and management are contributing factors. However, given the national significance of the area, the need for long-term conservation and preservation of resources, the public enjoyment potential, and the current amount of public ownership, the study area would make an excellent (and feasible) example of a cooperative national park unit — a partnership park or heritage area.

A partnership park or heritage area could take on one of two boundary configurations. The existing Delsea study area boundary could be used; however, because of deficits in NPS administration, management, and operating costs, visitor use areas could be limited to individual, noncontiguous examples of the resources and landscapes of the study area. Little would (or

could) be done with the intervening landscape between visitor use areas. The other option for a boundary configuration would be a core area that best represents the cultural landscape (the inter-relationship between both the natural and cultural resources) of the study area and exemplifies the context and feel of the area. This configuration would provide a more connected visitor experience; it would also provide for more efficient administration and management. Landowners and townships within this core area would be invited to participate in some form of partnership; success would, to some extent, depend on the willingness of these communities to adopt a shared vision. Because of this and because it would be a smaller area to manage, a greater assurance of long-term conservation of selected resources should occur.

ADMINISTRATION, STAFF, AND COSTS OF OPERATION AND DEVELOPMENT

Currently, much of the study area is managed by several groups, including the New Jersey divisions of Fish, Game and Wildlife and of Parks and Forestry, as well as nonprofit organizations. Continuing these relationships and forming other partnerships, should reduce NPS staffing and development requirements and annual operating costs. Each of the management concepts (presented later in this document) proposes different levels of partnership involvement and management opportunities. It is expected that the costs for concept A will be lowest, with the second option of concept C having the highest total costs.

LANDOWNERSHIP AND ACQUISITION COSTS

It is anticipated that there would be minimal land acquisition costs when compared to a "traditional" national park unit. However, it is not within the scope of this study to predict land acquisition costs. At the general management plan level, land

needs and acquisition costs would be analyzed and determined.

Each of the management concepts presented later proposes different landownership needs. Under concepts A and B there would be no land acquisition by the federal government. The first option under concept C proposes minimal land purchase by a willing seller or donation, through which the National Park Service could acquire resources that are threatened and in need of preservation and protection and that are important for interpretation. The second option of concept C proposes the greatest amount of land acquisition, through purchase (willing seller–willing buyer) and donation.

OPPORTUNITIES FOR THE LOCAL ECONOMY

An economic impact analysis was developed based on the NPS money generation model (MGM). This model estimates annual economic impacts by measuring sales, tax, and employment benefits (see appendix D). The approach used tourism data for Salem, Cumberland, and Cape May Counties as the foundation. The analysis examined a comparable area as a case study from which to forecast potential annual increases in county tourism.

Presuming that a national park system unit was established and developed in the Delsea region, the MGM forecasts the most likely scenario as an increase annually of 84,000 visitors (who would stay 18+ hours in the park) over current levels. Total annual direct spending would increase by about \$9.5 million, and total spending (direct plus indirect) would increase by about \$20.4 million. The increment in New Jersey taxes would amount to about \$1.4 million, and the increased spending would result in more than 700 additional jobs.

The above estimates represent the middle of a range of estimates. For the low-end estimates (for example, if the area were designated as a national heritage area), annual visitation would increase by about 24,000 visitors (who would stay 18+ hours

in the park) and would increase by about 38,000. Total annual direct spending would increase by about \$2.8 million, and total spending would increase by about \$5.6 million. Generated tax revenues would be about \$378 thousand, and the increased spending would result in about 170 additional jobs.

The high-end estimates could represent the result of a frequently visited national park system unit, the result of high national recognition and accelerated marketing techniques. In this case, there would be an increase of 144,000 visitors annually (who would stay 18+ hours in the park). Total annual direct spending would increase by about \$16.3 million, and total spending would increase by about \$36.6 million. Generated tax revenues would be about \$3 million, and the increased spending would result in about 1,450 additional jobs.

Although further study of the economic potential of the area is needed, it is clear that the presence of a nationally recognized area would provide substantial economic benefits to the local and regional economies.

TRANSPORTATION AND ACCESS

Access to this region comes primarily from four directions, two of which are the major routes for Delaware, Pennsylvania, and Maryland visitors to the Jersey shore. From the west and south west, access is over the Delaware Memorial Bridge to State Route 49, which parallels the Delaware Bay coastline in New Jersey. This is a two-lane, state highway with significant local traffic as well as through traffic. The alternate southern access to the region is from the Cape May – Lewes Ferry that connects Delaware and New Jersey, providing a more relaxed trip; it is sometimes used by visitors from the Washington, D.C., and Baltimore areas.

The approach from Philadelphia and points north is generally down State Route 55, a limited access, four-lane, divided highway. This road ends in Port Elizabeth (within the Delsea region) where it

merges with State Route 47, a two-lane road providing access to Cape May County and the southern Atlantic shore communities. A limited amount of traffic from Pennsylvania also accesses the area using the Commodore Barry Bridge to State Routes 322 and 77 into the Bridgeton area, where it intersects with State Route 49.

For travelers headed south from Monmouth and Ocean Counties, access is down the Garden State Parkway to the vicinity of Atlantic City and Cape May County and then across the state on a mixture of state and county roads that are primarily two-lane highways.

THREATS TO THE RESOURCES

Although the study area is away from the urban sprawl of Philadelphia and the cities of northern New Jersey, the development of these areas has an indirect impact on the Delsea region. In addition, development pressure in the Delsea region is increasing, and nearby areas are gradually losing their rural and small-town character as suburban housing developments and strip malls are being introduced. Increased exposure of the area's scenic beauty and recreational opportunities could result in the potential for development of pristine areas, or the overdevelopment of towns. Unmonitored development could lead to the disintegration of cultural landscape elements and important architectural resources, as well as decreased habitats for the wildlife species that use the natural resources. In addition, the surrounding development and the air pollution that it generates could affect the long-term preservation of structural resources. The gradual disintegration of structural materials due to the influences of acid rain may be difficult to monitor and expensive to prevent or rectify.

Because the study area encompasses about 450 square miles of mostly privately owned and municipal properties, there are various degrees of protection and preservation that are available for the natural and cultural resources. However, in many cases, there is inadequate funding for the conservation of many of these resources. Although

many of the resources are managed and preserved as responsibly as means allow, they often do not receive proper attention. Furthermore, the lack of studies and evaluation of these resources (mainly historic structures and cultural landscapes) inhibits the proper understanding of their significance and a lack of appreciation of the character-defining elements of the communities. This might result in neglect and inappropriate preservation of some of these resources.

With the use and development of the New Jersey and Delaware shores of the Delaware Bay, as well as the urbanization to the north, much of the area has the potential for exposure to hazardous materials and waste products. In the study area, the surrounding industries pose a risk to the natural habitats that support thousands of species, several of which are endangered (see appendix E). Because the Delaware Bay is a major water transportation route for petrochemical industries, there is a potential for accidental oil spills. This could be extremely hazardous because the Delaware Bay is a resting and feeding spot for millions of shorebirds during their spring migration to the Canadian Arctic. This migration, the second largest in the Western Hemisphere, coincides with the spawning period of the largest breeding concentration of horseshoe crabs in North America. Thousands of crabs lay eggs on which the birds feast. If an oil spill occurred, it could affect the entire migration pattern of millions of birds, as well as other species that rely on the migration.

CONCLUSION

In accordance with NPS guidelines for feasibility, it would be appropriate and feasible to include the New Jersey shore of the Delaware Bay within the national park system. For each criterion of the guidelines, the study area has the potential to meet NPS standards, including operation within a reasonable range of costs.

Within the national park system, delegated parts of the study area could either be owned and operated by the National Park Service or be

designated a national heritage area. If the National Park Service acquired property, which would become a unit within the park system, it would assume responsibility for the operations, maintenance, and funding of the unit. If a heritage area was legislated, the ownership and management of the area's resources would remain as they currently exist, with the National Park Service providing technical assistance and some short-term funding to the area.

Future planning, if the area is legislated as part of the national park system, would determine the amount of NPS ownership and financial responsibility. Funds would be required for development and annual operations and for preserving and protecting the area's resources and providing a quality visitor experience. If a national heritage area was established and the National Park Service became

involved in a management partnership with current property owners, the financial responsibility of the National Park Service would be greatly reduced and the resources would receive enhanced preservation attention.

Through an analysis of a full range of concepts, it became apparent that an NPS presence in the area would assist in the preservation and conservation of natural and cultural resources. However, it was determined through public comment and opinion that a traditional park unit was not practicable. Furthermore, a reduction in the overall federal and NPS budget and in money for the NPS purchase of lands would not likely make a traditional park unit achievable in this area. The concept of NPS assistance in coordinating both interpretation and promotion of the area's resources was favorably received by the public and is warranted for the preservation and conservation of area resources.

MANAGEMENT CONCEPTS

The final component of the special resource study process explores different management philosophies to ensure adequate interpretation of the natural and cultural resources and landscapes. As recommended under NPS guidelines for the completion of special resource studies, a study team typically proposes three or more management concepts for the study area. In this report, three management concepts (one with two options) have been developed.

As an aid to developing these management concepts, visitor experience goals and interpretive objectives were generated; these goals and objections precede the discussion of the three management concepts.

VISITOR EXPERIENCE GOALS AND INTERPRETIVE OBJECTIVES

Visitor experience describes what people do, learn, and remember when they visit an area. Some visitors may experience the study area's cultural landscape and see it as a key to understanding the evolution of vernacular landscapes in America; others may enjoy historic architecture and the small-town ambiance found in the region. Still others may just want to wander around the region's scenic byways, investigating the historic communities or natural resources in the region, while many will be attracted by the outstanding birding opportunities.

Visitor experience goals describe opportunities to be provided and highlight what visitors to the area will have the opportunity to learn, do, and appreciate about their visit. These goals can be achieved in many ways and places through various activities and interpretation. The following visitor experience goals were developed for the study area and apply to concepts B, C-1, and C-2.

Visitors will have the opportunity to

- learn the compelling stories of the cultural landscapes of the study area and the inter-relationships between the natural and cultural resources through a variety of media and experiences
- understand the evolution of cultural landscapes as it relates to the American experience as represented by the exceptional qualities of the landscapes in this region
- understand and appreciate the international significance of the study area's coastal wetlands
- participate in formal and informal activities and events associated with the study area.
- get information and orientation on a variety of resources and experiences available in the study area

Interpretation means telling stories for enjoyment and for discovering deeper meanings and relationships. Interpretation helps visitors enjoy the resources through personal understanding. An interpretive program is a critical part of the visitor experience. Interpretation offers information and orientation, and it supports conservation of resources — when people understand the importance of the resources, they tend to be more interested in conserving them and to feel that they have a personal stake in resource conservation.

The objectives for interpreting the study area are for visitors, after traveling the entire region or just a portion of it, to be able to understand the following:

- How the study area's cultural landscapes are representative of the American cultural landscape and architectural types and the settlement patterns on the land, including fields, towns, fences, road systems, and farmsteads that have evolved since westward expansion of the nation.

- Why the study area is a good model for understanding the fragility and interdependence of living things and their environment as exemplified by the shorebird and horseshoe crab relationship.
- Why the coastal marshes are one of the most productive ecosystems on the planet and how they play an important role in providing nursery habitat for marine and terrestrial species, feeding grounds for local and migratory species, and flood and erosion control. How rising sea levels could jeopardize these important ecosystems.
- How specialized industries and livelihoods have been developed and continue based on the particular natural resources of the region: white cedar for shipbuilding and shingle making; sand for glassmaking; horseshoe crabs for fertilizer and medical products; oyster beds, fishing grounds, and blue crab habitats for extensive commercial fishing and related industries; muskrat trapping for fur; and rich sandy loam soils for commercial fruit and vegetable production.
- How the evolution of agriculture from subsistence farming, through market-based agriculture, to a regional economy based on agricultural methods (including regionally specific forms based on marsh reclamation along the rivers and bay) has influenced the area.

ONGOING RESOURCE PRESERVATION EFFORTS IN THE STUDY AREA

There are several ongoing efforts to preserve and study the area's resources, including: (1) the Delaware Bay estuary program; (2) the Public Service Electric and Gas Company's Estuary Enhancement Program; (3) The Nature Conservancy's Last Great Places program; (4) the Bayshore protection plan; (5) programs of the

New Jersey Audubon Society; (6) the Maurice National Scenic and Recreational River; and (7) an active state open space acquisition effort through Green Acres. These efforts provide the National Park Service an opportunity, depending upon the approved concept, to work with those involved and to use existing studies, planned programs, and activities and share costs where feasible.

ESTIMATED COSTS

Although a broad range of anticipated costs for development and operations has been estimated, specific detailed estimates will be determined during a later general management plan process if the area became part of the national park system. The preliminary figures presented here considered many factors. The assumed visitation based on the economic study (see appendix D) determined the approximate size of the facilities. The function of these facilities, whether they would be self-service or staffed, determined the use and requirements of the facilities. Staff and maintenance requirements determined spatial needs. In consideration of these factors, and in comparison with other NPS facilities, a preliminary range of costs has been estimated for each concept. For the purposes of comparing the concepts, this study presents information on the quantities of space and/or material envisioned and applies standard class C estimates for those projections. Land acquisition costs would be greatest under option C-2.

In comparing the costs of the concepts, it should be remembered that all of the actions could be phased over a number of years to distribute costs. In addition, the costs may be shared by members of a partnership involving the private sector, state and local governments, the National Park Service, and other agencies or institutions. The costs shown would not necessarily be entirely a federal responsibility.

CONCEPT A: CONTINUATION OF EXISTING CONDITIONS

General Description

This concept describes existing conditions and does not envision management of the study area as a single system. The focus of this concept would be on the area's natural resources and independent actions by local governments and nonprofit organizations; coordination between these groups would continue to focus on shorebird preservation. No new actions would be undertaken by the National Park Service under this concept, and it would not meet NPS visitor experience and interpretive goals for the study area. This concept recognizes the ongoing activities within the region and provides some suggestions that local groups may wish to explore.

The study area includes significant portions of the two most economically distressed counties in New Jersey, Cumberland and Salem Counties, along with portions of Cape May County. Interest in "ecotourism" as a beneficial economic development opportunity is growing. (Ecotourism refers to environmentally responsible tourism based on ecological resources.) Recent designation of the Maurice River as a national scenic and recreational river provides a focal point for ecotourism in Cumberland County. Under this concept, local efforts to develop ecotourism for selected portions of the study area would likely continue at their current pace. Without extensive regional efforts, national recognition of the region would be slow to develop, potentially limiting the growth of ecotourism.

NPS Involvement/Role

Under this concept, there would not be any additional NPS involvement, except possibly for some technical assistance. A limited NPS presence would remain through the continuation of work on the Maurice Scenic and Recreational River and the New Jersey Coastal Trail (pending congressional re-authorization of the trail). Other than through the trail, the National Park Service would have no

significant role in interpreting and preserving the cultural landscape of the region.

The New Jersey Coastal Trail would provide limited interpretive links between state and nationally significant sites.

Local Role

The three counties in the area could develop a joint plan to market the area as a special region of New Jersey, contacting state and local governments and private nonprofit organizations to encourage compatible programs and development. Cultural and heritage commissions could solicit proposals that emphasize the region's significant historical and ethnographic resources, thus developing an awareness of local historical resources through regionwide special events that focus on the unique resources and culture of the study area (e.g., decoy making, fishing, trapping, glassmaking, and art). In addition, counties and groups could request grants and technical assistance from others such as NPS Rivers and Trails Conservation Assistance Program, the Intermodal Surface Transportation Efficiency Act's enhancement or scenic byways programs, or the New Jersey Historic Trust, among others.

Visitor Experience and Interpretation

Although an effort would be made to recognize cultural resources, interpretive efforts would continue to focus on natural resources (e.g., shorebird migration wayside exhibits, Delaware Bay estuary programs, the proposed New Jersey Division of Fish, Game and Wildlife's natural resource center in Maurice River Township, the New Jersey Audubon bird observatory, and The Nature Conservancy and Natural Lands Trust activities).

Resource Preservation

The cultural resources of the area might not have equal protection because of differing guidelines

among various local and state entities and a limited local advocacy. Natural resource preservation might be limited to that already underway by state and nonprofit agencies. Current development trends would continue, and — with development pressures possibly increasing in future years — valuable natural and historical resources might deteriorate.

Boundary

The boundary of this area would start 1 mile north of Deepwater, where it turns inland southeast to parallel State Route 49. The boundary would continue parallel to Route 49 then turn southwest along the Tuckahoe River to Route 49, where it would cross to Hunters Mill Road and then to County Route 548. From the Cape May/Cumberland county line junction at County Route 548, following southeast along the township boundary between Upper and Dennis Townships. From there, it would turn southwest on County Route 610, taking a southeast turn onto County Route 550, then south on County Route 608, heading east onto State Route 83 and then onto U.S. Route 9 to Cape May Courthouse. The boundary line would then head northwest onto County Route 657, immediately jogging southeast onto Magnolia Drive and then southwest onto Mechanic Road. From this point, the line would head southeast onto County Route 620 and then northwest onto County Route 618 and southeast onto Pennsylvania Avenue. It would change direction towards the west onto County Route 642, which crosses State Route 47 and becomes Norburys Landing Road until it ends at the shore. From the shore, the boundary would head northwest along the shore to Deepwater.

Note that this is the National Park Service's study area boundary, and interested local, state, and/or regional entities, governments, or communities could modify it to include other resources.

In fact, after delineation of the study area, it was pointed out to the National Park Service that several significant ethnographic resources were just outside (north) of the study area. The study

area boundary could also be expanded to the north along Route 55 to U.S. Route 40 west to Deepwater to capture some of these significant ethnographic and industrial resources related to the use of agriculture, such as Seabrook Farms (see Delsea Study Area map).

Landownership

There would be no land acquisition by the National Park Service under this concept. Acquisition efforts would be up to the state and local governments and nonprofit agencies.

Facility Development

Any facility development would depend primarily on state and local initiatives.

Preliminary Cost Estimates

There would be no NPS development or additional operating costs.

CONCEPT B: NEW JERSEY SHORE OF THE DELAWARE BAY NATIONAL HERITAGE AREA

General Description

There is draft legislation before Congress to establish a heritage partnership program that would systematically define and identify heritage areas and corridors in the United States through the provision of assistance, national designation, or both. A national heritage area is, according to the proposed legislation,

a place where natural, cultural, historic, and scenic resources combine to form a cohesive, nationally distinctive landscape arising from patterns of human activity shaped by geography. These patterns make American Heritage Areas representative of the national experience through physical features that

remain and the traditions that have evolved in them. Continued use of American Heritage Areas by people whose traditions helped to shape the landscapes enhances their significance.

This legislation remains in the development stage, and various forms of legislation are under consideration. The final provisions of such legislation, should it be enacted, are uncertain at this time. An important element of the legislation should be planning assistance or funds to develop a regional plan for interpretation and protection of the resources.

The general purpose of a heritage area would be to protect significant resources and manage them through a partnership approach. This would make it possible to retain and protect the stories and places that are special to people. Heritage areas would not be administered or owned by the federal government. Instead, they would be the focus of public-private partnerships. Protection of the resources generally would be accomplished through a combination of state, local, and private efforts with technical assistance from state and federal agencies. Implementation would require strong grassroots efforts to get Congress to pass legislation. Funding for managing these areas would be from federal, state, local, and private sources.

The NPS-defined visitor experience and interpretive goals for the study would be minimally met. However, the focus of this concept would be on the study area's historical resources. The interpretive media in a visitor center would be developed and administered by state and local entities. Under this concept interpretation would provide opportunities to learn the significance (both cultural and natural) of the region, enjoy its sights and sounds, realize its connection with other cultural landscapes throughout the country, and use education as a means of protecting and conserving the study area resources. The opportunities would be available, via several types of media, to those traveling the region and to those unable to visit the area.

NPS and Local Roles / Partnership Management

Through heritage area designation, Congress could prescribe money for the visitor center and development or planning and technical assistance by the National Park Service, thus bringing the National Park Service in as a short-term contributing partner (for 10–15 years, depending upon the approved legislation). Under this management concept, the Park Service could manage the visitor center in cooperation with other entities. With the national heritage area designation, the National Park Service might be able to provide funds for planning, limited technical assistance, and grants as well as other programs such as the Rivers and Trails Conservation Assistance program referenced in concept A. This assistance could take the form of master plan and sign plan development, training, brochures, promotion, and wayside exhibits. Designation would disperse economic and preservation benefits within the area.

Visitor Experience and Interpretation

The desired NPS visitor experiences would be attained, in part, through an orientation and an interpretive experience at a main visitor center. The experience at the visitor facility would be intense, with an emphasis on media and personal services. Visitors would be induced to experience the region and its stories, and they would be provided with the information to explore the region by themselves. If visitors desired a hands-on experience with the resources, it would be on the visitor's own initiative or through programs provided by the many organizations in the area other than the National Park Service.

Resource Preservation

Resource preservation activities would rely on state and local efforts, which might be supported through the national heritage area designation. Education of area residents and visitors would be used to encourage an increased preservation

attitude. The National Park Service would provide technical assistance (probably for a limited time, depending on the heritage area legislation) to citizens and state and local organizations and governments and thus become involved in the preservation and conservation of the area's natural and cultural resources.

Boundary

The boundary of this study area would be the same as described under concept A. If the region is declared a national heritage area, the boundary would then be legislated. Note that this is the National Park Service's study area boundary, and interested local, state, and/or regional entities, governments, or communities could modify it to include other resources.

As described in concept A, after delineation of the study area, it was pointed out to the National Park Service that several significant ethnographic resources were just outside (north) of the study area. The study area boundary could also be expanded to the north to capture some of these significant ethnographic and industrial resources.

Landownership

No NPS land acquisition would be proposed. Land for a visitor facility or existing structure(s) would be acquired and the facility would be built or donated by other groups or entities. The facility might be located adjacent to a character-defining resource, which could then be opened to visitors.

Facility Development

A visitor/orientation facility would be strategically located in the study area. This facility would act as the major destination point. Ownership and operation of this facility would be primarily a local/regional/state responsibility.

Preliminary Cost Estimates

There would be no NPS development costs. Operating costs would depend on the roles of the various partners and cannot be determined at this time.

CONCEPT C: DELSEA MEADOWS NATIONAL BAYSHORE — A PARTNERSHIP PARK

Option C-1

General Description. This option considers the creation of a nontraditional national park unit comprised of scattered resources to be preserved and interpreted. Only the most significant examples of different aspects of the study area's story would be included for consideration of NPS ownership through donation or possibly purchase (willing seller-willing buyer). This option would rely heavily on individual, non-NPS sites for additional interpretation. The Park Service would provide the broad, interpretive overlay at each of the three small to moderately sized visitor contact stations (one in each county) and might conduct some onsite interpretation (depending upon the arrangement worked out with the owners). More likely NPS interpretation would concentrate on driving tours, theme walks, and programs at NPS-owned sites. Training and technical assistance would be provided to owners of other sites, including an extensive wayside exhibit program and directional signs. A brochure would be available to direct visitors interested in exploring the region.

Under this option as many non-NPS historical sites and natural areas would be preserved and conserved as possible. State and local governments would be more involved in the active management and preservation of important resource areas than under concept B. Preservation efforts for cultural resources would be directed at sites listed on or eligible for nomination to the National Register of Historic Places, whether in state, local, or private ownership. Visitors would be encouraged to experience the wide variety of

resources in place, and through that experience to understand the significance and interrelationships of the resources in the region.

Designation as a unit of the national park system would provide national recognition and establish the study area as a destination for visitors from throughout the United States and other countries. The area would also serve as the southern anchor for the New Jersey Coastal Trail. Authorizing legislation and appropriations to implement this concept would require congressional action.

Option C-1 would provide broader potential for attaining the overall NPS visitor experience and interpretive goals than concepts A and B.

NPS Role. The National Park Service would operate and manage the visitor contact stations and those few cultural and natural areas owned by the National Park Service. If specific threats to significant resources occurred, other means of protection, such as memorandums of agreement with owners of threatened sites, would be considered. Assistance could take the form of interpretive planning, directional signs, training, brochures, promotion, and wayside exhibits. Designation would disperse economic and preservation benefits within the heritage area boundary.

The New Jersey Coastal Trail and this new park unit would be managed from the same office. The study area would function as the southern anchor for the trail as described in the *Implementation Guide* for the trail (NPS 1992b). A trail welcome center would be incorporated into one of the visitor contact stations.

Local Role. Resources between NPS sites, within the boundary, would be managed and interpreted by non-NPS agencies, organizations, or groups through memorandums of agreement. Towns wishing to be included would enact appropriate zoning ordinances to encourage preservation, conservation, and visitor use.

Visitor Experience and Interpretation. The orientation to and education about the region's

overall history and significance would be foremost under this option. Each county would have a visitor contact station where visitors could plan their travels; individual site or resource interpretation at each visitor contact station would be specific to that area but would also weave in the larger story of the study area and its resources. Visitors would be encouraged to travel to numerous specific sites in the study area (sites would be determined by the quality and quantity of their resources) and to participate in visitor activities. Cooperative agreements would provide for inclusion of interpretation at sites not owned by the National Park Service. There would also be some unstaffed NPS information kiosks throughout the study area. After visiting sites and resources of the study area and taking advantage of interpretive programs, visitors would have a heightened understanding and visual confirmation of the history and evolution of the cultural landscapes of the region and of the significance of the natural resources.

Resource Preservation. A few key parcels would be acquired by donation or willing seller-willing buyer and managed by the National Park Service. Cooperative agreements with the owners of other significant resources would be relied upon for preservation and in some instances for interpretive programs. Local governments would be encouraged to develop compatible and complementary zoning to protect the character of the region and provide for appropriate visitor services. This option relies to a great extent on existing programs and activities, such as the Environmental Protection Agency's National Estuary Program, the Maurice National Scenic and Recreational River (with the Park Service as an active cooperator), The Nature Conservancy, and the Delaware Bay Schooner Project. As in concept B, the National Park Service would provide technical assistance to citizens and state and local organizations and governments and thus become more involved in the preservation and conservation of the area's natural and cultural resources.

Boundary. The boundary of this area would be the same as concepts A and B. Note that this is the National Park Service's study area boundary, and

interested local, state, and/or regional entities, governments, or communities could modify it to include other resources.

As described in concept A, after delineation of the study area, it was pointed out to the National Park Service that several significant ethnographic resources were just outside (north) of the study area. The study area boundary could also be expanded to the north to capture some of these significant ethnographic and industrial resources.

Landownership. There could be minimal NPS purchase of lands that are important to the interpretation or protection of the regional resources.

Facility Development. A visitor contact station would be developed in each county, probably involving the cities of Salem, Bridgeton or Millville, and Dennisville. The National Park Service would acquire and manage these facilities; donated structures would be used first, if available and feasible, including possible adaptive reuse of historic structures. Several unstaffed NPS information kiosks would also be developed.

Preliminary Cost Estimates. NPS estimated development costs for option C-1 — for the contact stations and kiosks — would be \$5 to \$7 million. Operating costs for this option would be \$3 to \$4 million.

Option C-2

General Description. In contrast with the first option of concept C, the focus of this option would be on a core NPS area where contiguous resource preservation and interpretation would be possible. There would be an NPS visitor center, two visitor contact stations, and NPS ownership of several significant resources. There would be a more intense involvement by the National Park Service on non-NPS sites and resources for interpretation through a partnership approach. Therefore, in theory, most if not all of the land within the core area would be involved, through a

partnership with the National Park Service, for resource preservation and interpretation.

The goals of this option would be to conserve natural and historical resources and the cultural landscapes shaped by them. Emphasis in this option would be the integrated interpretation of the various significant cultural landscapes, starting from a broad overview and progressing to site-specific examples. To develop continuity, the National Park Service would seek cooperative agreements with property owners of lands between NPS-owned sites and resources that were important for interpretive, protective, or marketing purposes (for example, an agreement with a major farm in the area so that the use and contributions of agriculture to the landscape and economy and the significance of the region could be understood and interpreted). These lands would be owned and operated by others but included in the core area. Participation by others would be voluntary, but the National Park Service would provide incentives (for example, townships with appropriate historic and conservation zoning could have tour brochures developed for them).

Designation as a unit of the national park system would provide national recognition and establish the study area as a destination for visitors from throughout the United States and other countries. The area would also serve as the southern anchor for the New Jersey Coastal Trail. Some technical assistance would be available, perhaps taking the form of training, brochures, promotion, wayside exhibits, or preservation consulting. Authorization and appropriations to implement this option would require congressional action.

This option would provide more potential than option C-1 or concepts A and B for attaining the NPS visitor experience and interpretive goals for the study area.

NPS Role. Option C-2 would closely resemble a traditional national park but would depend in large part on partnerships being developed. The cooperation of local governments would be invited through incentives. While NPS ownership of selected significant resources would be essential,

cooperative agreements with owners of other resources, such as the Natural Lands Trust, The Nature Conservancy, the Delaware Bay Schooner Project, and state agencies, would be important to provide the desired broad interpretive overlay.

NPS management would focus on selected cultural sites that exemplify the typical patterns of settlement and provide focal points for the core area. Most of the natural resource focal points would be added through cooperative agreements with other governmental agencies and nonprofit organizations. Memorandums of understanding would be negotiated with other sites that would add to the interpretive context. Technical assistance would be available to owners of sites identified within the study area as significant resources. Grants might also be available if provided for in the enabling legislation.

The size of the proposed park would lead to its division into at least four administrative units, which would be defined by the landscapes they typify and natural barriers (rivers for example).

- Alloway Creek to Cohansey River — NPS focal point would be a Quaker Plantation.
- Cohansey River to Maurice River — NPS focal points would be examples of river and bay resources and Victorian villages
- Maurice River to Dennis Creek — NPS focal points would be examples of salt hay or diked farms and the New England architectural tradition.
- Dennis Creek to Norburys Landing — The NPS focal point would be the Cape May National Wildlife Refuge of the U.S. Fish and Wildlife Service.

The New Jersey Coastal Trail and this new park unit would be managed from the same office. The core area would function as the southern anchor for the trail as described in the *Implementation Guide* for the trail (NPS 1992b). A trail welcome center would be incorporated into the visitor center.

Local Role. An informal partnership council would be formed, consisting of representatives from any group affiliated through a cooperative agreement with the Park Service or from a local government that had enacted historic preservation and/or conservation zoning, as appropriate. This council would provide advice to the superintendent and would act as a forum to encourage informal coordination of activities by all members (similar to the New Jersey Governor's Recreational Travel Committee). The council would solve problems and issues throughout the area (e.g., protection, rehabilitation, and visitation to historically or naturally significant resources).

This option would complement efforts to develop ecotourism and efforts by the Delaware Bay estuary program to improve the ecosystem. Efforts toward obtaining expanded recreational access to the Delaware River and Bay and environmental education could be partially met by this concept.

Visitor Experience and Interpretation.

Interpretive programs would focus on the cultural landscapes and the critical natural processes as well as their relationships with human occupation. Where partners already interpret park themes, their efforts would be recognized, publicized, and complemented but not duplicated (e.g., the natural resource center at Maurice River Township, The Nature Conservancy, and the Delaware Bay Schooner Project); the National Park Service would provide technical assistance. The Park Service would incorporate interpretive programs of partners into overall park interpretive programs and brochures. Some of the **potential** properties that could be interpreted through a partnership program are listed below:

Salem County:

Hancock House State Historic Site
Hancocks Bridge Quaker
meetinghouse
Quaker pattern brick farmhouse

Cumberland County:

Agriculture — truck farming on Route 553
Bayside Tract farm at Caviar
Bear Swamp West

Bivalve/Shellpile
Burcham sisters' farm
Commercial Township
Delaware Bay Schooner Project
Dividing Creek, Newport, Cedarville
Dorchester and/or Fairton boat works
East Point Lighthouse
Fortescue
The Glades
Greenwich
Heislerville Wildlife Management Area
Maurice National Scenic and Recreational
River
Mauricetown
Moores Beach
Natural resource center — proposed by the
New Jersey Division of Fish, Game and
Wildlife
The Nature Conservancy — Warner Tract and
other bayside properties
Othello (African-American cemetery)
Salt hay farm/meadows
Springtown (underground railroad/ Harriet
Tubman)
Turkey Point Wildlife Management Area

Cape May County:

Cape May bird observatory
Cape May National Wildlife Refuge
Dennisville/Goshen — New England building
as contact point
Jakes Landing Wildlife Management Area
The Nature Conservancy — Eldora compound

Potential noteworthy sites outside the core area
with excellent potential for interpretation that
would add to the base story include the following:

Belleplain State Forest, including cranberry
bogs
Bridgeton Historic District, industrial resources
Carmel
Fort Mott State Park
Finn's Point National Cemetery
Gouldtown
Great Cedar Swamp
Millville — industrial resources
Salem Historic District
Seabrook Farms

Supawna Meadows National Wildlife Refuge
Wildlife management areas
Wistarburgh Glassworks outside Alloway
Woodbine

Resource Preservation. The National Park Service would be responsible for resource protection through ownership of significant parcels of land. All land would be acquired through donation or willing buyer-willing seller. Even with NPS ownership of significant properties, the bulk of the area would remain in its current ownership pattern (see Public Ownership map). Concentrating resources and potential into a core area would allow for a contiguous greenspace/preservation zone for wildlife habitat and facilitate public visitation .

Formal cooperative agreements with owners of other significant resources would secure protection and participation in the park (New Jersey Division of Fish, Game and Wildlife for wildlife management areas, Natural Lands Trust for the Glades, The Nature Conservancy (in Eldora, for the Warner Tract, and Gandy's Beach Preserve), the Delaware Bay Schooner Project, and Public Service Electric and Gas Company's Estuary Enhancement Program properties).

Efforts would be made to encourage local governments to enact complementary conservation, open space, farmland preservation, and historic preservation zoning. In return for enacting such zoning, communities could be included on park maps, walking tour brochures, etc. In addition, they could be invited to participate on the partnership council. Nine townships are included within the core area boundary — Commercial, Dennis, Downe, Fairfield, Greenwich, Lawrence, Lower Alloway Creek, Maurice River, and Stow Creek.

The National Park Service would provide technical assistance to citizens and state and local organizations and governments and thus become more involved in the preservation and conservation of the area's natural and cultural resources.

Core Area Boundary. The south park boundary would run east from the low water mark of the shore of the Delaware Bay at Norburys Landing on Norburys Landing Road, then north along State Route 47 to County Route 670. It would follow County Route 670 west across the Maurice River including the area designated as a national scenic and recreational river. The boundary would follow County Route 670 to County Route 676, and then to the point where the rail line formerly intersected County Route 676. From there it would follow the rail line north and west to Fairton. In Fairton the boundary would cross the Cohansey River at the end of Back Neck Road, running along its west bank to a point opposite Springtown. In Springtown, the boundary would run west on County Route 650 to Othello, then north on County Route 623 to County Route 642 (Stathem's Neck Road), then north on County Route 639 (Cook's Corner — Gum Tree Corner Road), then north on County Route 623. In Harmersville, the boundary would go west on County Route 658 (Hancocks Bridge Road) to Alloway Creek, then along the west bank of the creek to its intersection with the Delaware Bay, not including the Artificial Island nuclear generating facilities.

The above boundary is based on field surveys and existing data. It represents the best efforts to determine realistic boundaries at this initial stage. Due to the complexity of the resources and the incomplete data on the cultural resources of the

region, further cultural resource studies are recommended. Based on these studies and local interest, the boundary should be reassessed and recommendations for minor boundary adjustments to the core area should be submitted to Congress if this option of concept C were selected.

Landownership. This concept recognizes the national significance of the entire region but focuses NPS interest and activities on a core area that contains representations of all the themes — both natural and cultural — in a contiguous and focused geographic area of high integrity. The National Park Service would work cooperatively with compatible programs and initiatives outside the core area.

Facility Development. Interpretive facilities would include a visitor center near the junction of State Route 55 and either State Route 47 or State Route 49. This center would be complemented by visitor contact stations in shared facilities in Bridgeton and Salem, and the center would function as a New Jersey Coastal Trail welcome facility.

Preliminary Cost Estimates. NPS estimated development costs — for the visitor center, contact stations, and kiosks — for option C-2 would be \$7 to \$9 million. Operating costs for this option would be \$3.5 to \$4.5 million. Land acquisition costs under this option would be greater than under the other concepts.

Public Ownership map

TABLE 1: CONCEPT COMPARISON

TOPIC	CONCEPT A	CONCEPT B	CONCEPT C OPTION C-1	CONCEPT C OPTION C-2
BOUNDARY SIZE	about 288,000 acres	about 288,000 acres	about 288,000 acres	about 120,000 acres
OWNERSHIP	<ul style="list-style-type: none"> • State • Local • Private • Federal ownership (other than NPS) 	<ul style="list-style-type: none"> • Same as concept A 	<ul style="list-style-type: none"> • Limited NPS ownership for orientation and interpretive facility in each county, a few information kiosks, and for a few key resources important for interpretation and protection of regional resources. 	<ul style="list-style-type: none"> • NPS acquisition of land for core park area, which would include a visitor center, two contact stations, and significant resources important for interpretation and protection of resources. • Land would be acquired through donation or purchase from willing seller.
DEVELOPMENT — NPS AND OTHER	<ul style="list-style-type: none"> • No NPS development. • Continue state and local trends. 	<ul style="list-style-type: none"> • No NPS development. • Major visitor center would be developed by state/local/regional entities. • Planning funds might be supplemented by federal money through national heritage area designation. • State and local trends would continue. 	<ul style="list-style-type: none"> • National Park Service would build one visitor contact station in each county. However, existing structures would be used first, where feasible, including adaptive reuse of historic structures. • Associated development, such as visitor kiosks, would also be developed. 	<ul style="list-style-type: none"> • National Park Service would develop a major visitor center within the core area. Visitor contact stations would be developed in Bridgeton and Salem. • Non-NPS development would occur within the core area and study area.
MANAGEMENT STRUCTURE	<ul style="list-style-type: none"> • No NPS management. • Current management would continue on local, state, federally protected, and private land and resources. 	<ul style="list-style-type: none"> • Short-term NPS involvement (in partnership) in management of visitor center. Long-term management by local, state, regional entities in coordination with national heritage area designation. • Current management would continue on local, state, federally protected, and private land and resources. 	<ul style="list-style-type: none"> • National Park Service would own and manage minimal sites in the study area. • Expanded NPS involvement with state and local groups through partnerships. • Current management would continue on local, state, federally protected, and private land and resources. 	<ul style="list-style-type: none"> • National Park Service would own and manage significant sites within core area. • Expanded NPS involvement with state and local groups through partnerships. • Current management would continue on local, state, federally protected, and private land and resources.

TOPIC	CONCEPT A	CONCEPT B	CONCEPT C OPTION C-1	CONCEPT C OPTION C-2
VISITOR EXPERIENCE AND INTERPRETA- TION	<ul style="list-style-type: none"> ● Interpretive efforts would continue to focus on natural resources. ● Visitor use would continue in existing trends. ● Local special events might be available. ● No unified center would interpret area's resources and national significance (as defined by the National Park Service). ● Without extensive regional efforts, national recognition of the region would likely be slow to develop. 	<ul style="list-style-type: none"> ● Increase of interpretation by local/state/regional groups with a promotion of resources on regional basis. ● National Park Service would provide short-term technical assistance for preservation and interpretation of resources. ● Increased exposure would develop and expand regional tourism base. ● A visitor center would be strategically located in area, operated and managed by local/regional/state sources with short-term NPS assistance. 	<ul style="list-style-type: none"> ● One small to moderately sized interpretive and educational contact station would be in each county, under NPS management;; there would also be some NPS information kiosks. ● Greater interpretation of resources (than in concepts A and B). ● National exposure, in coordination with state and local efforts, would aid in the development of regional and national tourism base. ● Visitors would have heightened understanding and visual confirmation of the history and evolution of the cultural landscapes and of the significance of the natural resources. 	<ul style="list-style-type: none"> ● Intense interpretation of resources, especially the relationship of cultural and natural resources in the cultural landscapes. ● NPS interpretive involvement with resources on non-NPS land through cooperative agreements and partnerships with owners. ● A major visitor and interpretive center would be developed in the core area complemented by two contact stations in Bridgeton and Salem.
RESOURCE PRESERVATION AND PROTECTION	<ul style="list-style-type: none"> ● No NPS role in preservation of resources or cultural landscapes (except through limited technical assistance). 	<ul style="list-style-type: none"> ● Same as concept A but with more NPS technical assistance, including small grants programs as under authority of national heritage area designation. ● NPS involvement would increase preservation (over concept A) of resources and cultural landscapes. ● Preservation activities would be done by state and local entities. 	<ul style="list-style-type: none"> ● Formation of NPS unit would provide more resource preservation and protection than concepts A and B, through NPS ownership of a few key lands and resources. ● Most land would remain in current ownership patterns. ● Cooperative agreements with current landowners would help ensure resource protection. ● Management would continue on local, state, and federally protected and private land and resources. ● Local zoning ordinances would be encouraged to protect resources. 	<ul style="list-style-type: none"> ● NPS land acquisition through purchase and donation would provide resource and cultural landscape preservation and protection. ● NPS presence would provide stimulus for regionwide resource protection. ● NPS long-term involvement would result in long-term resource protection. ● Concentrating resources and potential into a core area would allow for a contiguous greenspace/preservation zone for wildlife habitat.

TOPIC	CONCEPT A	CONCEPT B	CONCEPT C OPTION C-1	CONCEPT C OPTION C-2
BOUNDARY DESCRIPTION	<ul style="list-style-type: none"> • The study area would be within the southern portion of New Jersey. The northern boundary would parallel (1 mile north) Route 49 from Deepwater, southeast to the Cape May County line, and head south encompassing the western half (west of U.S. Route 9) of Cape May County to Norburys Landing. The southern boundary would be the New Jersey shore of the Delaware Bay to Deepwater. • The northern boundary could be extended north along Route 55 to U.S. Route 40, west to Deepwater. 	<ul style="list-style-type: none"> • The boundary would be the same as concept A. • The northern boundary could be extended north along Route 55 to U.S. Route 40, west to Deepwater. 	<ul style="list-style-type: none"> • The boundary for this option would be the same as concepts A and B. 	<ul style="list-style-type: none"> • The boundary of the core area would be reduced from the boundaries of concepts A and B and would be focused on the shore area of the bay. The southern boundary would be the shoreline of the bay. The northern and eastern boundaries would follow Route 47 on the east and head northwest roughly along Routes 550 and 553 to Hancocks Bridge. From there the boundary would follow Alloway Creek to the shore.
NPS LAND ACQUISITION	<ul style="list-style-type: none"> • None. 	<ul style="list-style-type: none"> • None. 	<ul style="list-style-type: none"> • Some NPS land acquisition through donation or purchase (willing seller-willing buyer). 	<ul style="list-style-type: none"> • NPS land acquisition through donation or purchase (willing seller-willing buyer).
FUNDING SOURCE	<ul style="list-style-type: none"> • No NPS investment or funding in area (except for limited monies related to technical assistance). 	<ul style="list-style-type: none"> • NPS fiscal involvement could include funding for planning, operations, and technical assistance and grants through national heritage area legislation. 	<ul style="list-style-type: none"> • Congressional appropriation to National Park Service for establishment and acquisitions. • Limited cooperative planning or technical assistance to resources within study area boundary. 	<ul style="list-style-type: none"> • Congressional appropriation to National Park Service for establishment and acquisitions. • Some fiscal assistance would be provided, as appropriate.
NPS STAFFING NEEDS	<ul style="list-style-type: none"> • None. 	<ul style="list-style-type: none"> • Limited NPS staff for short-term assistance. 	<ul style="list-style-type: none"> • Moderate amount of NPS staff would be required to manage NPS areas and provide technical assistance. 	<ul style="list-style-type: none"> • Staff would be required for management of NPS unit, as well as possible technical assistance for cooperative efforts and partnerships with state and local entities. • More NPS staff required than other concepts.

TOPIC	CONCEPT A	CONCEPT B	CONCEPT C OPTION C-1	CONCEPT C OPTION C-2
PARK HEADQUARTERS	<ul style="list-style-type: none"> • None. 	<ul style="list-style-type: none"> • For the short term, headquarters would be in the visitor center. 	<ul style="list-style-type: none"> • NPS administrative staff would be stationed in visitor contact stations. 	<ul style="list-style-type: none"> • NPS headquarters in visitor center.
PRELIMINARY NPS OPERATING COSTS	<ul style="list-style-type: none"> • None. 	<ul style="list-style-type: none"> • Operating costs would depend on the roles of the various partners and cannot be determined at this time. 	<ul style="list-style-type: none"> • Operating costs would be \$3 to \$4 million. 	<ul style="list-style-type: none"> • Costs would focus on visitor and interpretive facilities. • Operating costs would be \$3.5 to \$4.5 million.
NPS DEVELOPMENT COSTS	<ul style="list-style-type: none"> • None. 	<ul style="list-style-type: none"> • None. 	<ul style="list-style-type: none"> • \$5 to \$7 million 	<ul style="list-style-type: none"> • \$7 to \$9 million

IMPACT TOPICS

The ideas presented in this report are conceptual; thus, the potential consequences of implementing the concepts can be addressed only in a general way. Specific environmental consequences would be evaluated during later development planning.

DERIVATION OF IMPACT TOPICS

Specific impact topics were developed to focus discussion and to allow comparison of the environmental impacts of each concept. These impact topics were identified based on federal laws, regulations, and orders, including NPS *Management Policies*, NPS knowledge of limited or easily affected resources, and concerns expressed by the public or other agencies during scoping and meetings. A brief rationale for the selection of each impact topic is given below, as well as the rationale for deferring specific topics for future consideration and analysis.

Natural Resources

The Clean Air Act requires federal land managers to protect air quality, and NPS *Management Policies* address the need to analyze air quality during park planning.

The National Environmental Policy Act calls for an examination of the impacts on the components of affected ecosystems. NPS policy is to protect the natural abundance and diversity of all of a park's naturally occurring communities. Because of the conceptual nature of the concepts, it is impossible to identify animal and plant communities that could be affected. However, some discussion is possible on the general amount of potential disturbance to these communities, including water quality in the case of aquatic communities.

Historic Resources

The NPS organic act and *Management Policies*, the National Historic Preservation Act, and the National Environmental Policy Act require the protection of (or the examination of impacts on) historic resources. This includes resources such as structures and archeological sites and artifacts, as well as intangible resources such as cultural landscapes and ethnographic resources.

Socioeconomic Resources

Local communities that provide public services and receive tax revenue or benefits to their economies through retail trade could be affected by development locations.

Visitor Use and Experience

As identified by the development of the concepts, the overall visitor experience, potential visitor use, and interpretation vary for each concept.

Impacts on NPS Operations

The size of the boundary area, which varies between the management concepts, would affect the amount of NPS involvement and the operational requirements.

IMPACT TOPICS DEFERRED FOR FUTURE ANALYSIS

Wetlands

Executive Order 11990, "Protection of Wetlands," requires that all federal agencies must avoid, where possible, impacts on wetlands. However, it is impossible to identify potential impacts on wetlands because no concept specifies a development location. When specific development sites

are selected, a wetland determination would be done and an analysis of potential impacts, if any, on wetlands would be completed to fulfill additional compliance needs. Any development proposal would consider measures to avoid wetlands. Any wetland impacts that cannot be avoided would be mitigated according to applicable state and federal laws and regulations and NPS guidelines.

Floodplains

Executive Order 11988, "Floodplain Management," requires all federal agencies to avoid construction within the 100-year floodplain unless no other practicable alternative exists. However, it is impossible to identify potential impacts on floodplains because no concept specifies a development location. When specific development sites were selected, and if they are near a riverine system, a floodplain determination would be done as well as an analysis of the potential impacts (if any) on floodplains would be done to fulfill additional compliance needs. Any future development proposal would consider measures to avoid floodplains. Any floodplain impacts that cannot be avoided would be mitigated according to applicable state and federal laws, regulations, and NPS guidelines.

Threatened and Endangered Species

The Endangered Species Act requires an examination of impacts on all federally listed threatened or endangered species. NPS policy also requires examination of the impacts on state-listed threatened or endangered species and federal candidate species. Other species may be identified as being rare in an area or sensitive to human disturbance. It is impossible to identify potential impacts on threatened or endangered species because no concept specifies a development location. When specific development sites are selected, a site-specific survey would be done at each site to determine the presence of any threatened or endangered species or critical habitat and to define the potential impacts to satisfy

additional compliance needs, if any, on these species or their critical habitats. Any future development proposal would consider measures to avoid protected species. Any impacts on threatened or endangered species or their habitats that cannot be avoided would be mitigated according to applicable state and federal laws and regulations and NPS guidelines. When federal lands are involved, a biological assessment could be required, in compliance with the Endangered Species Act.

Archeological Resources

The National Historic Preservation Act and NPS planning and cultural resource guidelines require the consideration and protection of archeological resources in development proposals. It is impossible to identify potential impacts on archeological resources because no concept specifies a development location. When specific development sites are

selected, a site-specific survey would be done at each site to determine the presence of any archeological resources and to define the potential impacts to satisfy additional compliance needs. Any future development proposal would consider measures to avoid these resources. Before any ground-disturbing activities by the National Park Service, a professional archeologist would determine the need for archeological testing or inventory. Any such studies would be carried out in time so that measures to avoid sites could be considered. Any large-scale investigations would be undertaken in compliance with section 106 of the National Historic Preservation Act.

Ethnographic Resources

Although a preliminary identification of ethnographic resources has been conducted, further investigation, consultation, and study would have to be completed before a preferred alternative is chosen and development occurs. Consultation with ethnographic groups would occur during any general management plan process and before any

action is undertaken. Especially in regards to Native American groups, any development actions are subject to the Native American Graves Protection and Repatriation Act of 1990.

TABLE 2: ENVIRONMENTAL CONSEQUENCES

TOPIC	CONCEPT A	CONCEPT B	CONCEPT C OPTION C-1	CONCEPT C OPTION C-2
CONCEPT DESCRIPTION	Continuation of existing management trends.	Establish the area as a national heritage area	Establish a national park unit of scattered resources	Establish a national park unit comprised of a core area.
IMPACTS ON NATURAL RESOURCES	There would likely be a more comprehensive understanding of the significance and preservation and use of the natural resources than the cultural resources. There would be no anticipated impacts on vegetative and wildlife communities. Natural resources protection would continue through private, state, and local landownership and management.	Increased education of the area's significance would result in a more comprehensive understanding of the significance of and need for preservation of the natural resources. There would be no anticipated impacts on vegetative and wildlife communities. Natural resource protection would continue through private, state and local management.	Increased education of the area's significance would result in a more comprehensive understanding of the significance of and need for preservation of the natural resources. Construction activities for visitor facilities could disrupt some resources.	The emphasis on resource preservation, conservation, and visitor education would provide the highest degree of resource protection. NPS ownership and presence in the core area, along with cooperative efforts with local and state parties, would ensure protection of resources. As under option C-1, construction activities for visitor facilities could disrupt some resources.

TOPIC	CONCEPT A	CONCEPT B	CONCEPT C OPTION C-1	CONCEPT C OPTION C-2
IMPACTS ON CULTURAL RESOURCES	Without a universal approach, evaluation, recordation, and protection of significant historic and ethnographic resources might be fragmented and possibly uncoordinated. Preservation and conservation of sites would be the responsibility of state and local citizens, organizations, and governments. More emphasis would be placed on the education and preservation of the natural resources. Without a unified effort on educating visitors about the cultural significance of the area and preservation of the associated resources, significant resources could deteriorate.	Enhanced awareness of historic resources and site significance would encourage resource protection and preservation. However, the absence of a unified research and evaluation program might result in nonrecognition or loss of significant sites. Resource preservation and conservation, which would rely on local initiative, might result in visual improvement and increased visitation. More attention than in concept A would be focused on cultural landscapes and archeological and ethnographic resources, which would heighten awareness of their significance.	A few key resources would be owned and managed by the Park Service. Increased education of the area's significance would result in a more comprehensive understanding of the significance of and need for preservation of the cultural resources. An NPS presence and technical assistance in the area would assist in local and state initiatives for resource preservation and interpretation. A structured and unified analysis of historic resources would provide the basis of resource preservation. Cooperative relationships with other landownership groups and individuals would help preserve other resources. Area zoning through local governments would help preserve the character of the cultural landscapes and architectural resources.	Impacts would be the same as under option C-1. However, more landownership and a more established NPS presence in the area would result in more protection for cultural resources in the core area.

TOPIC	CONCEPT A	CONCEPT B	CONCEPT C OPTION C-1	CONCEPT C OPTION C-2
IMPACTS ON SOCIOECONOMIC ENVIRONMENT	Except for possible local and state actions to provide visitor facilities and interpretive programs, there would be limited potential for short-term increases in employment or additional increases in retail trade from tourism. Other than through the New Jersey Coastal Trail, the National Park Service would have no significant role in interpreting and preserving the cultural landscape.	Development and expansion of existing state and local interpretive efforts and facilities, combined with the effort to preserve and protect significant resources, could result in some economic benefits. However, it is not anticipated that these efforts would provide substantial benefits for the local economy. Increased use of specific areas for recreational purposes could benefit the local economies in these areas.	Cooperative efforts with local and state agencies and citizens to preserve, protect, and interpret significant resources could generate some employment opportunities for area residents, and there could be some short-term benefits from construction of the visitor centers. The interpretation of the area's scenic beauty and cultural landscapes, along with the promotion of the area's recreational opportunities, could result in some additional visitation to the area and an increase in tourism monies.	Impacts for the core area from implementing this concept would be the same as option C-1. Also, an increased NPS presence in the core area would lead to more national recognition, which could make the core area a national destination spot for visitors and vacationers. This might generate more tourism monies for local and state businesses. Furthermore, federal funding for programs might result in grants and assistance for local organizations.
IMPACTS ON VISITOR EXPERIENCE AND INTERPRETATION	Interpretation and visitor services would continue to be offered by different state and local organizations and governments and might lead to a piecemeal approach to interpreting the resources. Visitors might have difficulty understanding the significance of the area as a whole.	With an enhanced awareness of the area's natural and cultural resources, visitors could use the area with an understanding of its significance. Having a central visitor facility would provide a more comprehensive and unified effort to attract and educate visitors. Use of the area for recreational opportunities would be increased.	As in concept B, an enhanced awareness of the area's natural and cultural resources would provide visitors with an understanding of the area's significance. With NPS ownership and management of some resources in the area, a comprehensive and unified effort would be made to attract visitors and educate them about the natural and historical significance of the area and its recreational opportunities.	Impacts for the core area would be the same as in option C-1, although more pronounced.

TOPIC	CONCEPT A	CONCEPT B	CONCEPT C OPTION C-1	CONCEPT C OPTION C-2
IMPACTS ON NPS OPERATIONS	There would be no impacts on NPS operations.	With the National Park Service providing technical assistance to citizens and state and local organizations and governments, it would become more involved in the preservation and conservation of the area's natural and cultural resources. Any planning and construction of visitor facilities could involve short-term technical assistance from the National Park Service, and the Park Service would be a partner in managing the visitor center.	Any planning and construction of visitor facilities would involve technical and monetary assistance from the National Park Service.	Impacts for the core area would be the same as under option C-1. Furthermore, a more permanent NPS presence would require more staffing and budget commitments from the National Park Service.

APPENDIXES

APPENDIX A: NATIONAL SIGNIFICANCE STATEMENT — NEW JERSEY SHORE OF DELAWARE BAY BY BERNARD L. HERMAN

National Significance Statement-New Jersey Shore of Delaware Bay

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I. Introduction

The cultural resources of the DELSEA Study Area are nationally significant under the primary theme of American Ways of Life and the secondary themes of Architecture and Development of the English Colonies, 1688-1763. American Ways of Life celebrates the distinctive social structures of American communities and regions as they are represented through tangible resources such as architecture, landscape, and material folk culture. The preliminary assessment of the DELSEA study team identified three areas of historic activity that best represent the distinctive qualities of the region through the primary theme of American Ways of Life: agriculture, maritime, and food processing. The common thread that binds these secondary themes to the American Ways of Life is the relationship between human occupation and action and the natural environment. These relationships, signified in surviving tangible cultural resources, span the entire period of the study area's historic occupation and they consistently reflect the continuous cultural diversity of the region. The multicultural aspect of the region, however, should not be read in terms of a "melting pot." The DELSEA study area is a region with many simultaneously expressed ethnic, occupational, and class identities—only a few of which are touched upon in this assessment. Also, ethnographic and archaeological evidence describing the cultural landscapes of prehistoric and historic Native Americans extends the documented relationship between people and the environment centuries into the prehistoric past. The assessment of the significant Native-American contributions to the cultural landscapes of the DELSEA study area, however, are beyond the scope of this report. Still, we should consider the existing landscape as archaeological in the sense that it is composed of chronologically identifiable strata of multiple periods of human occupation that are best

understood and appreciated in the aggregate as they survive in the present.

The DELSEA study area contains cultural resources that are individually significant at the national level, but far more compelling is the national significance found in the whole of the study area's constituent elements. In addition to the American Ways of Life, the themes of Architecture and Development of the English Colonies, 1688-1763 speak to the national importance of the DELSEA region. The colonial domestic and religious architecture that survives throughout the study area describes a settlement culture distinct from those associated with New England and the South. The total mix of cultural resources related to all three themes identified within the study area describe broad patterns of American social and environmental history through a complex array of relationships that is greater than the sum of its individual elements. Moreover, several classes of cultural resources are eligible for thematic listing as National Historic Landmarks—particularly as they “embody the distinguishing characteristics of an architectural type specimen, exceptionally valuable for the study of a period, style, or method of construction, or that represent a significant, distinctive, and exceptional entity whose components may lack individual distinction,” and “are composed of integral parts of the environment not sufficiently significant by reason of historical association or artistic merit to warrant individual recognition but collectively compose an entity of exceptional historical or artistic significance, or outstandingly commemorate or illustrate a way of life or culture.”

The following statement of national significance for the DELSEA study area uses the primary theme, American Ways of Life, with particular attention to the types of cultural resources found in the study area and their relationship to the multiple historic contexts they occupy. Because earlier studies inventoried a wide range of cultural resources and related them to their specific contexts, this statement of significance concentrates on the presentation of unified themes for interpretation. From the outset the following statement of significance is object-driven in the sense that the resources surveyed and documented in previous work suggest both significant time periods and historic contexts defined by tangible resources found

in the existing landscape. The national significance of the DELSEA study area can be assessed through the evaluation of several distinctive functional (related by a specific purpose, style, or other physical characteristics) and associative (related through a broad-based historic theme or historic context) property types. The emphasis in the following assessment on particular classes of cultural resources does not occur to the exclusion of others, but intends to focus on and underscore both key property types and the ways in which they convey and illustrate the theme of American Ways of Life. The historic periods and themes discussed here are represented by additional property types at both the functional and associative level.

II. Historic Periods and Themes

The cultural landscape history of the DELSEA region can be divided into a series of four distinct, but overlapping historic periods represented by a diverse array of tangible cultural resources. The historic periods discussed below identify major developments and transformations within the American Ways of Life theme. Each period can be associated with a bracketed time frame, but the defining characteristics are those of human action in the landscape.

- Period I: [1670-1720]--Formative Landscape Traditions;
- Period II: [1710-1790]--An Emerging Regional Landscape;
- Period III: [1780-1870]--The Landscape of Agricultural Capitalization;
- Period IV: [1850-present]--The Cultural Landscape of River and Bay.

The following statement of national significance examines each of these periods in the context of the historic themes identified above. While key tangible resources are cited as examples of broader trends, they represent neither the full range of tangible resources nor all the subtleties of the American Ways of Life theme found in the study area. A fuller discussion of the particular history of different categories is available from other sources listed in the working bibliography.

- **Period I: [1670-1720]--Formative Landscape Traditions.**

The period of initial durable settlement describes the late seventeenth-century arrival of Quaker, Baptist, and other English-speaking groups into the province of West Jersey and embraces the first wave of permanent architecture that remains on the land today. English settlers were not the first to take up and occupy lands on the east side of the Delaware during the 1600s. Scandinavian, Dutch, and representatives of other European nationalities had been resident in the area since the second quarter of the seventeenth century and enjoyed significant levels of economic and cultural interaction with both Native Americans and other settler groups. Their occupation of the study area, however, appears to have left little in terms of above-ground tangible cultural resources. Initial British settlement produced a substantial body of first and second generation architecture, much of which still stands. The number and quality of early colonial buildings rivals the long celebrated architectural history of New England and adds to our understanding of colonial American settlement culture in significant ways. Two housing traditions illustrate the period of formative landscape traditions.

The single colonial architectural tradition most closely associated with the DELSEA study area is that of the pattern end brick houses erected from circa 1718 through the colonial period. The distinguishing characteristic of these dwellings is the use of glazed brick laid in intricate geometric patterns including chevrons, zigzags, and lozenges, along with construction dates and the initials of the first occupants. The architectural significance of the pattern ended houses was first recognized in the 1880s when Thomas York, a local photographer and antiquarian, undertook what may be the earliest known historic architectural survey in the United States. York bound his large format photographs and accompanying family histories into a large volume that remains in the collections of the Salem County Historical Society. The Historic American Buildings Survey recorded many of the pattern end brick houses as they stood in the 1930s. Subsequent generations of architectural and social historians have examined these

buildings with care with the result that the pattern ended houses of the DELSEA study area are not only one of the most distinctive of America's early architectural traditions, but also one of the most interestingly interpreted.

The pattern ended houses of the DELSEA study area are nationally significant as the architectural florescence of a regional building style without parallel in colonial America. Although other colonial communities in the Delaware Valley such as those associated with the Quaker settlements around Burlington, New Jersey, and Stenning Manor, located in northwestern Delaware and adjacent Pennsylvania, produced initialed and dated houses, none built dwellings with the sophistication or in the numbers found in the DELSEA study area. The pattern ended houses, however, possess more than architectural significance. As a group of related buildings, they illustrate the American Ways of Life theme in terms of Domesticity and Family Life and Agricultural Communities. With their prominent display of dates and initials, the pattern ended houses describe public expressions of wealth, kinship, and social status in an early agricultural community. Most closely associated with the early Quaker families who immigrated into the area during the 1670s, the pattern ended houses symbolize a "monumental" and long term investment in the region. The use of initials clearly places people and families on the land in personal terms, while the use of brick, the most costly and labor intensive of locally available building materials, speaks to the power of achieved prosperity. Thus, the houses stand as the monumental signatures of families whose descendants continue to occupy the area. The dates on the houses present a remarkable testament to the rise and fall of economic and political power. The dated houses are concentrated in the period from 1720 to 1750 or the second full generation of permanent English-speaking settlement. The dates of the pattern ended houses consequently underscore the rapid economic rise of the first Quaker planters and their ability to exercise a tangible measure of visual authority over their landscape. The rapid and dramatic decline of new pattern ended houses in the later decades of the 1700s speaks just as eloquently to the loss of Quaker authority even as the community assumed

a more diverse social and religious character.

While the pattern ended houses are one property type that reflects the themes of American Ways of Life, Architecture, and Development of the English Colonies, 1688-1763, there are others that clearly identify the national significance of the study area. Chief among these are the New England frame houses found in Cumberland and Cape May counties. The New England frame houses are the tangible remains of the seventeenth-century settlement of several southern New Jersey communities by religious dissidents from elsewhere in the American colonies. Baptists and Quakers migrated from areas of coastal Rhode Island and Connecticut during the 1680s and reestablished themselves along the Delaware River and Bay. Chief among these communities is the area of present day Greenwich, Cumberland County, where several frame houses dating from the late 1600s remain standing. The distinguishing characteristics of heavy timber frames with shouldered corner post construction, widely spaced common rafter roofs with trenched common purlins, and structural bay system including heavily framed chimney bays are hallmarks of this architectural tradition as seen in buildings like Vaux Hall and the Trullender House near Greenwich or the Thomas Ludlam House near Dennisville, Cape May County. The architectural characteristics observed in these buildings, however, possess a level of significance beyond their illustration of resettlement migration internal to the American colonies. The framing techniques seen in their earliest form in these buildings informed a larger regional building idiom. By the mid-eighteenth century framing details including the use of shouldered posts and trenched common purlin roofs were in use on both sides of the Delaware. Thus, the New England frame houses of the DELSEA study area describe a process of cross-cultural communication between different settlement groups as revealed in the lasting tangible resources of its earliest architectural traditions.

The pattern ended brick houses and the New England frame dwellings of the DELSEA study area are two domestic architectural traditions that illustrate the cultural dynamism of the region. Related to these two examples are other building cultures represented by lesser known

Dutch, Scandinavian, German, and African contributions. Taken individually, any one of these traditions is distinctive and significant to understanding the development of regional architectural styles and broad patterns of cultural history in a formative historic landscape. Truly distinctive, though, is the combined presence and visual impact of all these traditions in a focused geographic area and their representation in terms of surviving buildings. The DELSEA study area reflects in microcosm the larger significance of the middle Atlantic region during the age of settlement. The middle Atlantic area, particularly the greater Delaware Valley, may best be understood as a region of regions. Multiple overlays of ethnically and nationally distinctive settlement groups arrived, took up land, and began to build. The product of their labors speak to particular origins, personal ambition, and the general willingness to appropriate styles and techniques from neighboring groups. Because the DELSEA study area remained largely rural through the twentieth century, the tangible resources associated with this early settlement culture survive in unusual numbers in a landscape that preserves its overall integrity. As resources that illustrate the theme of American Ways of Life the settlement architecture of the region addresses in concrete terms ideas about domestic organization through the siting and construction of dwellings. Through shared details and the practice of commemorative detailing, the pattern of kinship, religious, and class association is evident in ways not seen in other early American landscapes.

Period I Historic Properties: National Historic Landmarks. The following list of historic properties represents a partial catalog of sites and buildings eligible for listing as National Historic Landmarks. These are **partial listings that require review and expansion.** The historic properties are presented here in the context of a potential thematic multiple property listing that reflects the larger landscape and not just individual buildings. All the properties listed are eligible under the following National Historic Landmarks criteria (see Attachment 8): #1) they outstandingly represent broad patterns of United States history—specifically in the context of colonial settlement history and the process of cultural transfer;

#4) they embody the distinguishing characteristics of an architectural type exceptionally valuable for the study of a period, style, or method of construction--particularly as they relate to criteria #1 and #5; #5) they are composed of integral parts of the environment that may or may not be sufficiently significant by reason of historical association or artistic merit to warrant individual recognition but collectively compose an entity of exceptional historical or artistic significance and outstandingly commemorate or illustrate a way of life or culture.

Pattern Ended Houses: National Register

Dickinson House, Salem Co. [NR ref. 75001156]
Joseph Ware House, Salem Co. [NR ref. 89002418]
Hancock House, Salem Co. [NR ref. 70000393]
Richard Brick House, Salem Co. [NR ref. 76001183]
Benjamin Holmes House, Salem Co. [NR ref. 78001794]
Samuel and Sarah Nicholson House, Salem Co. [NR ref. 75001158]
Zaccheus Dunn House, Salem Co. [NR ref. 77000905]
Seven Stars Tavern, Salem Co. [NR ref. 76001184]
Joseph Shinn House, Salem Co. [NR ref. 79001518]
Greenwich Historic District (multiple properties) [NR ref. 72000772]

Pattern Ended Houses: unlisted

Abel Nicholson House, Salem Co.
Richman House, Salem Co.
Anais Sayre House, Roadstown, Cumberland Co.
Padgett House, Salem Co.
Nathaniel Chambliss House, Salem Co.
John Maddox Denn House, Salem Co.
Pledger House, Salem Co.
Remington House, Cumberland Co.

New England Frame Houses

Caesaria River House, Cumberland Co.

Trullender House, Cumberland Co.

Vaux Hall, Cumberland Co.

Thomas Ludlam House, Cape May Co.

- **Period II: [1710-1820]—An Emerging Regional Landscape.**

The emergence of a regional cultural landscape and its association with the theme of American Ways of Life is clearly represented in the religious houses of worship found throughout the DELSEA study area. While other categories of cultural resources or property types, such as later generations of houses, can be used to make this point, they tend to lack the visual impact and diversity of the region's church and meeting house building traditions. Surviving places of worship are tangible cultural resources in the DELSEA study area that reflect a wide variety of protestant faiths ranging from early Quaker meeting houses to African Methodist Episcopal churches. As a functionally related group of historic properties, houses of worship in the DELSEA study area are nationally significant in their material representation of religious tolerance and freedom of expression from the periods of colonial settlement through the early national period. Moreover, the houses of worship reflect in their layout, construction, and ornament the rise of a broader regional religious architecture and its relationship to an emerging national design culture in the mid 1800s. The churches and meeting houses of the DELSEA study area illustrate the American Ways of Life theme as symbolic fixtures for rural communities in an agriculturally-based, non-nucleated landscape. The diversity and significance of houses of worship can be seen readily in the example of the churches and meeting houses in the Bridgeton, Cumberland County, vicinity.

Most distinctive among these buildings are the several Friends or Quaker meeting houses. Meeting houses are typically sparsely ornamented rectangular brick structures with

gable roofs and balanced principle elevations containing two entries. The Greenwich Friends Meeting with its plain Flemish bond brickwork and interior galleries and gender divided seating area epitomizes the meeting house form as it emerged at the close of the eighteenth century. The Greenwich Friends Meeting also presents a uniformity of style uniting meeting houses throughout the region on both sides of the Delaware. The uniformity extends to a surprising level of detail, such as the profiles of meeting house benches. The Greenwich meeting house has its equivalents elsewhere in the DELSEA study area, including the Salem and Lower Alloways Creek meetings. Like the pattern ended houses discussed above, the meeting houses illustrate the power of religious, kinship, and craft networks through a single property type.

The emergence of a regional culture represented in houses of worship is not limited to Quaker meeting houses. The Old Broad Street Presbyterian Church in Bridgeton, the Old Stone Church at Fairton, Cohansey Baptist Church near Roadstown, and Emmanuel Lutheran Church near Friesburg in Salem County exhibit a consistent use of locally manufactured brick, relatively plain exteriors, and well finished interiors. Methodist and African Methodist Episcopal congregations were founded in the same time period, but the surviving churches associated with their faiths tend to date to the mid nineteenth century. With their Italianate detailing, structures like the Goshen Methodist Church and Mt. Pisgah African Methodist Episcopal Church reflect local building traditions overlaid with nationally popular design elements.

The key element in relating the houses of worship to the American Ways of Life theme is their reflection of an emerging regional culture in a landscape of religious tolerance. The individual churches and meeting houses possess architectural details and congregational histories that make them eligible for listing in the National Register of Historic Places at the level of local and state significance. The sum of these structures, however, argues for a much higher degree of importance. No other eighteenth and early nineteenth-century cultural landscape in the eastern United States possesses the tangible resources to illustrate and describe

such a basic tenet--the freedom of belief and religious expression--of our national culture with such diversity and integrity. While other cultural landscapes in the middle Atlantic region exhibit similar aspects of religious diversity and tolerance, they do not do so with such a high degree of visibility within a relatively compact geographic area.

As emblems of the emergence of a regional culture, the meeting houses and churches of the DELSEA region function on two levels. First, in their construction and architectural detail, the houses of worship continue the building traditions found in the early dwellings associated with the first period of initial durable settlement. The builders of churches and meeting houses drew on the existing vocabulary of regional vernacular architecture and from that range of options created a body of functionally-related buildings that visually unify the landscape. Quaker meeting houses, such as the Salem Friends Meeting, often contain glazed brick dates in their gable ends in a style that connects them to local domestic architectural practice. Interestingly, all the meeting houses dated in this fashion were erected in the years after the practice of dating houses had begun to wane. Second, if the houses, brick and frame alike, represented an initial visual organization of the landscape, the houses of worship provided a common architectural point of reference which strengthened and communicated a regional landscape character. The didactic purpose of churches and meeting houses in the emergence of a regional culture is multifoliate. At the level of religious belief and practice we surmise the obvious process of community building around shared philosophical and spiritual values; at the material level we see buildings that celebrate the virtues of local design and construction. Third, the churches are significant in the ways in which they connect across denominational lines and describe common values derived from the symbolically richest structures on the landscape. The emergence of a regional culture reflects a far greater level of unity than the congregational community. In essence, we see in the fabric and fixtures of the landscape the workings of a shared architectural language that suggests a level of cultural connection conveyed across diverse views of the world. The object lesson of diversity and its unifying functions

within a regional and national culture remains current and necessary in the modern United States.

Period II Historic Properties: National Historic Landmarks. The following list of historic properties represents a partial catalog of sites and buildings eligible for listing as National Historic Landmarks. These are partial listings that require review and expansion. The historic properties are presented here in the context of a potential thematic multiple property listing that reflects the larger landscape and not just individual buildings. All the properties listed are eligible under the following National Historic Landmarks criteria (see Attachment 8): #1) they outstandingly represent broad patterns of United States history--specifically in the context of religious freedom and the rise regional culture; #4) they embody the distinguishing characteristics of an architectural type exceptionally valuable for the study of a period, style, or method of construction--particularly as they relate to criteria #1 and #5; #5) they are composed of integral parts of the environment that may or may not be sufficiently significant by reason of historical association or artistic merit to warrant individual recognition but collectively compose an entity of exceptional historical or artistic significance and outstandingly commemorate or illustrate a way of life or culture.

Churches, Meeting Houses and Places of Worship: National Register

Salem Friends Meeting (Broadway Historic District), Salem Co. [NR ref. 92000098]

Old Broad Street Presbyterian Church and Cemetery, Cumberland Co. [NR ref. 74001159]

Old Stone Church, Cumberland Co. [NR ref. 77000860]

Greenwich Friends Meeting (Greenwich Historic District), Cumberland Co. [NR ref. 72000772]

Deerfield Presbyterian Church, Cumberland Co. [NR ref. 80002481]

Cold Spring Presbyterian Church, Cape May Co. [NR ref. 91000785]

Churches, Meeting Houses and Places of Worship: Unlisted

Woodstown Friends Meeting, Salem Co.

Hancocks Bridge Friends Meeting, Salem Co.

Cohansey Baptist Church, Cumberland Co.

- **Period III: [1820-1940]—The Landscape of Agricultural Capitalization.**

The dramatic reshaping of the agricultural landscape that occurred from the early to mid nineteenth century well into the twentieth century continues to characterize the DELSEA study area today. The range of activities that occurred in this extended time period include the cultivation of different crops, the reclamation of wetlands for agricultural use, and the industrialization of the countryside both in terms of food processing and transportation. All of these activities and the tangible cultural resources are unified through the extended historic process of the capitalization of agriculture. The capitalization of agricultural specifically designates historic actions that required an investment in the improvement of the physical landscape related to farming, food processing, or food shipping. The range of property types associated with this process range from the mid nineteenth century drive-through granaries found on farms throughout the area to the breached dikes of the salt hay meadows. While certain individual property types, such as barns or field patterns, provide a starting point for a discussion on the capitalization of agriculture, only an understanding of the total agricultural landscape conveys its material complexity. The study of the salt hay industry prepared by Historic American Buildings Survey researcher Kim Sebold ably captures the richness of both the tangible landscape and the processes that led to its physical transformation. Other historic actions produced similar effects. For example, the multiple overlays of ethnic settlements through the late nineteenth and early twentieth centuries produced a number of distinctive rural communities tied to the study area's agricultural economy. Two phases in the period of the capitalization of agriculture underscore the region's significance.

The agricultural period extending from the early nineteenth century through the Civil War was defined by the cultivation of cereals such as wheat and corn as well as livestock

husbandry and the early development of orchards. The centrality of grain and cattle (both beef and dairy) to the agricultural economy is clearly represented in the many nineteenth-century agricultural buildings that stand in the region. The most common farm buildings are granaries designed around a runway flanked by two slat-sided corncribs and containing a second floor storage loft for wheat and other small grains. The wide runway typically has a shallow earth ramp leading up to the threshold and sufficient width to accommodate wheeled vehicles and corn shellers or other machinery. As a regional building form, the drive-through granaries appear to have developed on the Delaware side of the river around 1820. By 1850 the drive-through granary was a common fixture on southern New Jersey farms as well. The second agricultural building type most closely associated with this time period is the bank barn. The term bank refers to the intended bilevel design of these buildings with an upper level runway that could be reached via a raised earth embankment. The ideal design incorporated all the functions of the farm under a single roof with hay mows, grain storage, and crop processing above and animal stalls and milking parlors below. The lack of hilly terrain hampered many farmers in their construction of these buildings with the result that many of the large barns lack the ramp to the upper level. The drive-through granaries and multi-purpose large barns describe a market-oriented agriculture focused on the cultivation and export of grain, butter, and beef. The capitalization of agriculture described through the property types associated with these activities are shared throughout the lower Delaware Valley, but only in the DELSEA study area and increasingly scattered areas of southern New Castle County and adjacent Maryland have these mid nineteenth-century farm buildings survived in an undeveloped agricultural context.

The second period of significance in the capitalization of agriculture extends from the Civil War through the Great Depression and is represented by a fundamental shift in the kinds of crops cultivated. With the collapse of eastern grain markets in the post Civil War years and the relocation of the American milling industry to the upper Midwest, farmers in the Delaware Valley confronted a period of declining farm income and farm values. The opening of the

railroads throughout the Philadelphia back country and the rapid growth of urban populations through this period provided the farmers of the DELSEA region the opportunity to develop new and more perishable crops. Peaches, strawberries, blue berries, cucumbers, tomatoes, peppers, sweet potatoes, and other fruits and vegetables were widely cultivated for export by rail to regional urban markets. At the same time, advances in food preservation technology led to the establishment of numerous small canneries throughout the region. Chief among the foods processed in canneries were tomatoes and beans.

The shift in the kinds of crops grown and the processes required for their harvest, processing, and shipment produced new property types. Grading sheds, canneries, rural train stations, migrant housing, sweet potato houses, and other building types were erected as specific responses to changes in agricultural production. Overall, the second phase of the capitalization of agriculture in the DELSEA study area produced three distinct phenomena: highly specialized farm building types such as sweet potato houses; food processing facilities exemplified by canneries; and a new generation of rural housing characterized by the appearance of migrant labor housing, the appearance of new agricultural settlements often associated with the arrival of new immigrant groups like Jews, Italians, or Ukrainians, and the substantial growth of rural villages usually in conjunction with rail lines. The capitalization of agriculture represented in the buildings and landscape features of this new, rapidly changing agricultural countryside was a process repeated all along the middle Atlantic and northeastern seaboard. What distinguishes the agricultural landscapes of the DELSEA study area, however, is their sustained viability. Fields of peppers, eggplant, tomatoes, cucumbers, and melons continue to be planted and harvested year after year. Some of this produce is destined for road side stands or city markets while a substantial portion finds its way to various food processing operations. This kind of agriculture and its tangible reminders is a process shared with other regional communities, most notably the farms of the Eastern Shore of Virginia and Maryland. But in many locales, such as Long Island and northern Delaware, farming has either declined in the wake of intensive real

estate development pressures or shifted to other forms of production like the chicken industry.

The tangible resources identified in terms of landscape features like diked meadows, railheads, specialized farm buildings, and canneries are also reflected in intangible resources, in particular the folk memory of the people populating the many rural communities found throughout the DELSEA study area. The scope of these intangible resources is suggested in the "Trip Report" of National Park Service regional ethnographer, Rebecca Joseph. Joseph lists many of the human resources in the area as a guide and inducement to further study. If the tangible resources covered in this assessment represent a living culture, then the exploration of intangibles related to the capitalization of agriculture and the following discussion of the cultural landscape and bay is central to the maintenance of national significance.

Period III Historic Properties: National Historic Landmarks. The following list of historic properties represents a partial catalog of sites and buildings eligible for listing as National Historic Landmarks. **These are partial listings that require review and expansion.** The historic properties are presented here in the context of a potential thematic multiple property listing that reflects the larger landscape and not just individual buildings. All the properties listed are eligible under the following National Historic Landmarks criteria (see Attachment 8): #1) they outstandingly represent broad patterns of United States history--specifically in the context of agricultural capitalization and the industrialization of the countryside #4) they embody the distinguishing characteristics of an architectural type exceptionally valuable for the study of a period, style, or method of construction--particularly as they relate to criteria #1 and #5; #5) they are composed of integral parts of the environment that may or may not be sufficiently significant by reason of historical association or artistic merit to warrant individual recognition but collectively compose an entity of exceptional historical or artistic significance and outstandingly commemorate or illustrate a way of life or culture. The best sources for identifying these properties are the volumes Historic Themes and Resources within the New Jersey Coastal Heritage Trail and From Marsh to

Farm: The Landscape Transformation of Coastal New Jersey. In addition to these limited printed sources, it is imperative that a thematic cultural resource survey be undertaken to identify all historic properties associated with this theme and extended time period. The recommended survey should be particularly cognizant of multicultural resources associated with the theme and time period. Of particular concern is the role of African-Americans in the agricultural landscape as farm owners, agricultural laborers, tenants, and workers in the food packing and shipping industry. Similar attention should be devoted to the presence of other ethnic groups such as early twentieth-century Jewish and Italian farm families.

- **Period IV: [1850-present]--The Cultural Landscape of River and Bay.**

The tangible cultural resources associated with the extended period from the mid nineteenth century to the present continue to dominate impressions of the DELSEA study area. Visitors unfamiliar with the area are stunned by the vast stretches of unspoiled marshes, pine woodlands, and tilled fields. The most distinctive category of resources associated with this period, however, are those related to life and work on the Delaware River and Bay. Ranging from the oyster fleet sailing out of Bivalve and Port Norris to the hunting and trapping communities situated along and between the Delaware's many tributaries, the maritime cultural resources directly address the relationship between human occupation and natural environment. Maritime communities with similar mixes of occupational and natural resources are not uncommon along the Eastern seaboard, but the state of preservation, diversity, and vitality of the DELSEA study area in this regard is distinctive. Perhaps the most distinguishing characteristic of the marshland economy is its resilience and viability. The oyster trade, for example, grew through the nineteenth century to its heyday at the turn of the century, but then entered its decline through a combination of pollution, over-fishing, and natural disease. Today oystering on the Delaware is a difficult pursuit with limited returns. In other oystering communities, such as those associated with the Chesapeake Bay, the decline of the fishery is equated with cultural loss.

The typical tone of discussion is of decline and decay. The situation along the Delaware is different in the sense that local residents celebrate their long occupation and use of the environment in terms of affection for and familiarity with the natural environment. No one contests the decline of the oyster industry, but few support the view that there is a corresponding loss of a way of life. Rather, most residents would argue that their efforts simply have been redirected into other maritime-related pursuits such as fishing, trapping, and turtling. Still, there is a key distinction to be made between the open water fishery represented by oystering and the inshore fishery associated with trapping and fishing. In terms of the American Ways of Life theme, the range of property types identified with marshland and inshore fishing are among the most distinctive associated with the study area. Shad and sturgeon skiffs, sneak boxes, boat yards, trapping marshes, chandleries, sail lofts, floating cabins, and a host of other small craft and work sites are all tangible resources that embody the character and significance of the cultural landscapes of river and bay. An example of one property type, the floating cabin, introduces several qualities that define the national significance of DELSEA study area.

Floating cabins exist somewhere between the categories of architecture and small craft. Most ably documented by Natalie Peters, the floating cabins (also known as cabin scows) are a tangible cultural resource both unique to the study area and bound to the full seasonal cycle of the local fishery. No other functionally-defined group of historic resources so clearly defines the intimate relationships between humans and their marshland environment in its seasonal round of activities. The floating cabins are small, roughly eight by sixteen foot dwellings mounted on flat bottomed hulls of thick New Jersey cedar planks. On the interior the typical floating cabin contained a single room. A small wood burning stove occupied the end nearest the principle entry and defined a common sitting and cooking area. Tiers of bunk beds took up the rest of the interior along with built in cupboards and storage spaces. The interior finish comprised exposed studs and ceiling joists and the painted interior surface of the exterior

cladding. Horizontally sliding sash windows illuminated the interior. Although the precise origins of the floating cabin are as yet unknown, they have been in use on the wetlands and marshes of the DELSEA study area since at least the later decades of the nineteenth century and it is reasonable to assume they are the perfection of a regional response to a demanding way of life.

As a property type the floating cabin represents a unique regional response to a complex seasonal cycle of marshland work and harvest similar to the seasonal cycles identified by Mary Hufford with the New Jersey Pinelands National Reserve. Floating cabins in the DELSEA study area were built to be movable in response to the varied demands of the inshore fishery. During the spring shad runs when fishermen worked in teams around the clock, the floating cabins were pulled up in floating villages along the edge of the Delaware marshes. Anchored in what were known as scow dives, the floating cabins were part of a landscape ensemble that included a flimsy wharf and the shad skiffs used in the actual fishery. The functional parameters of that ensemble were increased by the buy boats that purchased the netted shad from the fishermen and by the small boats or bateaux rowed or poled through the marsh by farmers and their families who sold provisions to the fishing community. The seasonal parameters of the floating cabin ensemble are enlarged even further when we consider their use as housing for hunters in the fall and early winter, muskrat trappers during the winter months, and for the taking of turtles, terrapins, and sturgeon during the spring and summer.

The concept of landscape ensemble is essential to the broader significance of the floating cabin as a property type and its relationship to the American Ways of Life theme as it relates to the DELSEA study area. Determining the national significance of the DELSEA study area turns on the hypothesis that "this regional culture or way of life, diverse yet still closely tied to natural resources, is a scarce and important historical contributor to the broad cultural mosaic of the United States, and in that context it merits evaluation against national significance criteria." Essential to national significance are the "mix" of resources and the ways they address The

American Ways of Life theme. The mix of resources around the property type of the floating cabin in the mid nineteenth to mid twentieth-century and the rise of a marshland economy addresses this questions with the same compelling force evident in the three periods discussed above.

The natural resources of the Delaware River and Bay exhibit a long and checkered cultural history. Although a commercial fishery was active on the river in the eighteenth century, the capitalization of agriculture, transportation developments, and the rise of regional urban markets with an insatiable taste for native delicacies pushed the harvest of the Delaware's resources to new heights. Excessive fishing, hunting, and trapping coupled with the loss of habitat through land reclamation both fueled and undercut the marshland and river economy. Pollution had so fouled the Delaware River by the mid twentieth century that shad all but vanished from the scene—and with their disappearance came the decline of the fishery. Sturgeon, sought for caviar, and oysters, known as “white gold”, similarly dwindled. By the 1940s the heyday of the Delaware fishery was over. What remained intact, however, was a regional consciousness about a distinctive way of life and the pursuit of activities associated with that way of life. Even as the quality of marsh environments and open waters of the Delaware River and Bay have improved dramatically in the last twenty years, regional inhabitants have renewed their commitment to their common landscape.

The floating cabins of the late nineteenth and early twentieth century now occupy a different landscape ensemble—one that reflects the celebration and preservation of regional consciousness. Fishermen no longer establish themselves in seasonal villages along the river side nor do they shoot hawks and other raptors from temporary camps set up in the marsh lands. The floating cabins that once crowded the creeks and shorelines of the Delaware survive only in limited numbers. Pulled up on blocks behind houses or beached on the berm of a dike, the floating cabins symbolize a shifting relationship between the residents of the DELSEA study area and their environment. In their original use the cabins were always part of ephemeral cultural

landscapes. Dragged through the marshes as the season and the fishery dictated, the floating cabins constantly defined successive landscape ensembles. The common quality connecting all these ensembles was the interaction of people with the total environment. Quite simply, since at least the mid nineteenth-century all the environments in the DELSEA study area were cultural. The twentieth-century economic failure of those environments did not conclude the relationship between people and the bay and river, but shifted it in other directions that revolved around smaller-scale less profitable pursuits.

The modern history of the floating cabin, however, symbolizes what lies on the other side of the historic fishery and points once more to the national significance of the DELSEA study area as a didactic landscape that can instruct all visitors in the nuances and fragility of historic natural and cultural environments. Over the past ten years, floating cabins have gained a new level of significance. As Natalie Peters observed, the floating cabins gradually became repositories for the perpetuation and expression of regional identity.

Period IV Historic Properties: National Historic Landmarks. The following list of historic properties represents a partial catalog of sites and buildings eligible for listing as National Historic Landmarks. **These are partial listings that require review and expansion.** The historic properties are presented here in the context of a potential thematic multiple property listing that reflects the larger landscape and not just individual buildings. All the properties listed are eligible under the following National Historic Landmarks criterion (see Attachment 8): #5) they are composed of integral parts of the environment that may or may not be sufficiently significant by reason of historical association or artistic merit to warrant individual recognition but collectively compose an entity of exceptional historical or artistic significance and outstandingly commemorate or illustrate a way of life or culture. A thematic cultural resource survey will thematically identify all historic properties associated with this theme and extended time period. Again, the recommended survey should be particularly cognizant of multicultural resources associated with the theme and time period.

The role of African-Americans in working the water as well as their employment in the canning industry requires specific attention. Moreover, especial care should be given to ephemeral cultural resources associated with this period and theme.

Potential Eligible Property Types and Historic Properties

Floating Cabins (examples include the Hutchinson and Waddington floating cabins in Salem County).

Sail Oyster Fleet (examples include *Cashier* and multiple vessels anchored primarily at Bivalve, Cumberland County).

Trapping, hunting, and fishing marshes (all counties).

Small craft (examples include distinctive regional craft such as sturgeon and shad skiffs, sneak boxes, and melonseeds, all counties).

Maritime support occupations (examples include shipyards, shucking houses, packing sheds, sail lofts, marine railways, trapping cabins, and skinning sheds).

Landscape features (examples include wharves, landings, and scow dives).

Summary: The National Significance of the DELSEA Study Area

The discussion of the national significance of the DELSEA Study Area encompasses two concluding issues. First, does the study area meet the criteria for national significance established by the National Park Service? Second, are there comparable environments of national significance in the eastern United States? The answer to both questions returns to the initial hypothesis that the DELSEA Study Area with its mix of cultural and natural resources is “a scarce and important historical contributor to the broad cultural mosaic of the United States.” The measure of national significance asks the following:

- 1) is the study area an outstanding example of a particular resource;
- 2) does the study area possess a high degree of integrity;
- 3) does the study area possess exceptional value or quality in illustrating or

interpreting the American Ways of Life theme; and

- 4) what is the opportunity for public use, enjoyment, or “scientific” study?

In terms of tangible resources, the DELSEA study area is an outstanding example of a specific resource particularly in the context of the American Ways of Life theme. The four periods of landscape development discussed above are unified in the fabric of a vital, living countryside. The chronological depth and cultural diversity of this well-defined geographic area present an exceptional mix of tangible resources that describe regional developments in a national context. The rise of regional identity represented in colonial settlement architecture and houses of worship, the capitalization of agriculture found in barns, canneries, diked fields, and railroad villages, the intimate negotiation between people and the natural environments of river and bay have their particular equivalents in other locales, but only in the DELSEA region is the mix so evocative and accessible.

The integrity of the tangible cultural resources of the DELSEA study area is equally remarkable. Open fields intercut with streams and woodland give way to vast stretches of open marsh. Fields, woods, and marsh are defined by tangible cultural resources ranging from the pattern end brick houses of the colonial period to the floating cabins of the early twentieth century that exhibit integrity of location, design, setting, materials, workmanship, feeling, and association. The individual integrity of historic properties, however, is linked by the greater integrity of the landscape. Tangible resources reflect significant historic and cultural activity in a mix that blends differing time periods and property types in a harmonious whole. The area of Greenwich Township, Cumberland County, graphically illustrates this higher level of physical integrity. The domestic architecture of colonial settlement stands in farmsteads that include the work buildings associated with the capitalization of agriculture. Diked salt hay meadows abut open marshes identified with the cultural landscapes of river and bay. Friends meeting houses in Greenwich and on the road to Othello share a regional landscape of religious

tolerance landscape with Baptist, Methodist, African Methodist Episcopal, and Presbyterian houses of worship. The integrity of individual resources is amplified in the mix of the cultural landscape.

The DELSEA study area possesses exceptional value and quality in illustrating and interpreting the American Ways of Life theme. Again, the extraordinary mix of tangible resources within a single cultural and natural landscape demonstrates this conclusion. The DELSEA study area exists as a didactic landscape. Its tangible resources provide a starting point to learn about larger patterns and values in American life from the first periods of European settlement to the rise of a contemporary grass roots environmental consciousness. Tangible resources from impounded marshes to canneries provide material starting points to engage a larger instructive experience. As early as the 1880s the people of the DELSEA study area saw the connection between historic objects and the values articulated in the American Ways of Life theme. Thomas York's 1880s photographs of the pattern end brick houses of Salem County recorded the relationship between historic settlement, kinship, and the landscape of his own day. Current efforts by local residents directed toward the preservation of the DELSEA study area's floating cabins illustrates a similar process that links objects to the regional sense of place that defines and unifies the countryside. The process of building regional identity through landscape ensembles is a distinguishing feature of the DELSEA study area.

The opportunity for the public use, enjoyment, and "scientific" study of tangible cultural resources in the DELSEA study area is diverse and enormous. The residents of the area have long celebrated their culture in multiple ways. Open house tours, seasonal celebrations, local historical collections, and accessible landscapes render the DELSEA landscape open and accessible. The need for more intensive study through archaeology, architectural history, local history, folklore, ethnography, and environmental history is apparent. Significantly, the residents of the DELSEA study area are willing and able partners in the study and documentation of their cultural landscapes.

Finally, are there landscapes comparable to the DELSEA study area? This question returns once again to the original hypothesis "that this regional culture or way of life, diverse yet still closely tied to natural resources, is a scarce and important historical contributor to the broad cultural mosaic of the United States" and that central to the national significance of the study area is the "mix" of tangible cultural and natural resources. The DELSEA is not unique in its individual elements. The maritime character of the region connects to numerous marsh, bay, and ocean side communities throughout the eastern United States. The lower Eastern Shore of Maryland, particularly in the Crisfield and Deal Island vicinity, exhibits comparable relationships between people and the native environment. Similarly, the seaside communities along Virginia's Eastern Shore, the Outer Banks of North Carolina (especially Ocracoke Island), and the South Carolina low country in the vicinity of McClellanville all document the complex, constantly negotiated relationships between human beings and the environments they occupy and work.

Similarly, the architecture of initial European settlement and the rise of distinctive regional landscapes are not unique to the DELSEA study area. The early colonial architecture of eastern New England and the diverse sectarian architecture of the Philadelphia hinterland are well documented. The tangible presence of both trends is evident in the DELSEA study area in a way that speaks to distinctive textures in the material landscapes. The dramatic decorative use of brick and the florescence of a vernacular religious building tradition combining shared architectural elements across distinct faiths distinguish the DELSEA study area. In the same way, tangible resources related to the landscapes of agricultural capitalization are found from northern New England to southern Georgia. Barns, field patterns, rural industries, agricultural villages, and historic transportation routes speak to a nineteenth and early twentieth-century national countryside consumed with the desire for rural improvement and profit. In each locale, however, that desire tended to be expressed through a strategy combining local custom with

scientific reform. The result were distinctive landscapes connected by common market centers and a shared agrarian ideology.

Two factors set the DELSEA study area apart. First, the idea of landscape ensemble is central to the national significance of the DELSEA study area and its representation of the American Ways of Life theme. The ensemble concept describes a landscape composed of multiple elements reflecting different categories of significant historic activity within a relatively compact setting. The fact that four major chronologically and functionally distinct subthemes related to the American Ways of Life theme exist with equal levels of visibility and accessibility in a common landscape identifies the DELSEA study area as a nationally significant resource. Second, the question of integrity enters the evaluation process. The cultural landscape closest to the DELSEA study area in terms of proximity, history, and shared values is the Delaware coast. At the level of individual properties there are many overlapping resources between the area of southern New Castle and Kent counties on the western shore and Salem, Cumberland, and Cape May counties to the east. What is lacking in Delaware, however, is the quality of a continuous environment composed of an articulated mix of tangible resources. While elements of the Delaware cultural landscape retain integrity and significance, the larger integrity of a resource made great by the sum of its parts is increasingly absent. Moreover, the incursion of development in the form of industry, suburbanization, and transportation routes all but insure the continuing erosion of Delaware's overall landscape integrity.

Thus, the DELSEA study area presents us with a nationally significant regional landscape embodying multiple aspects of the American Ways of Life theme. Qualities of landscape ensemble, didacticism, and overall integrity contribute to the broader importance of the DELSEA study area as a countryside capable of communicating values about the relationships between people and their environments.

APPENDIX B. THE SIGNIFICANCE OF THE DELSEA REGION: A REPORT
PREPARED FOR THE NATIONAL PARK SERVICE BY PETER O. WACKER

THE SIGNIFICANCE OF THE DELSEA REGION: A REPORT PREPARED FOR THE
NATIONAL PARK SERVICE

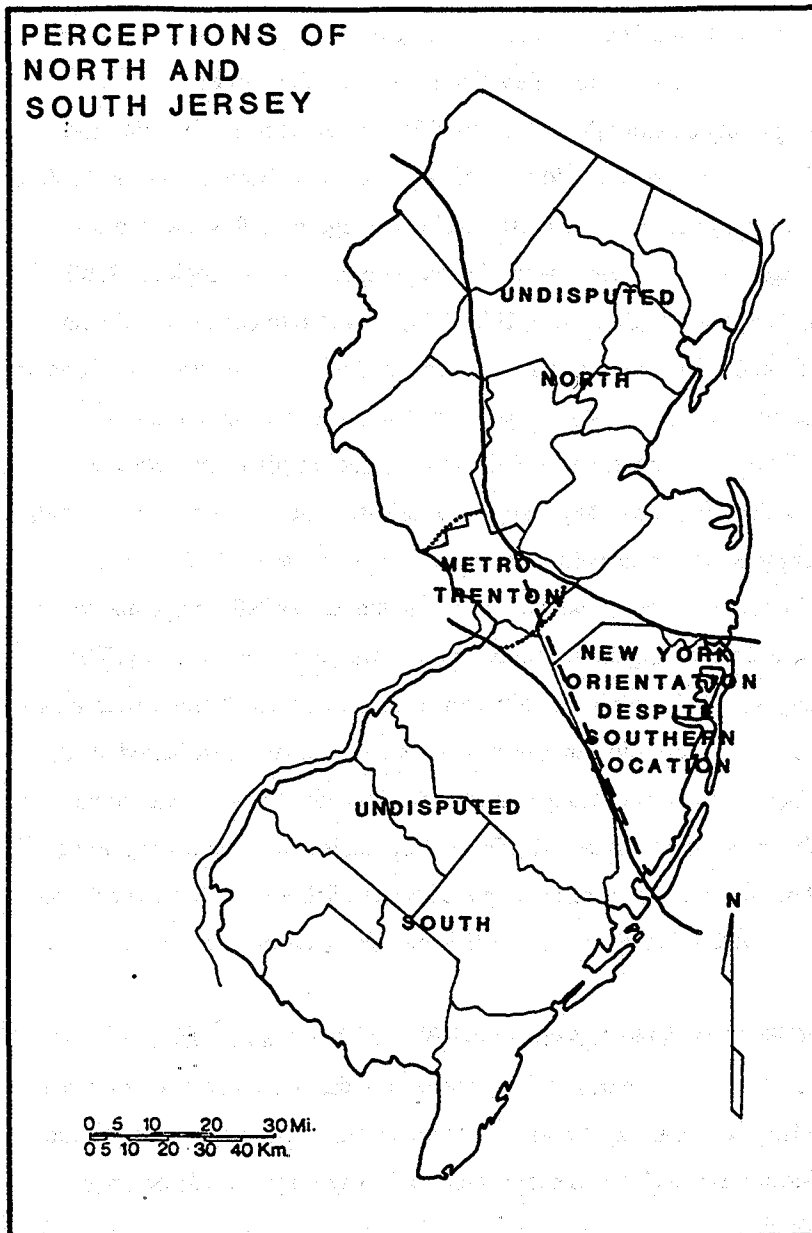
Peter O. Wacker

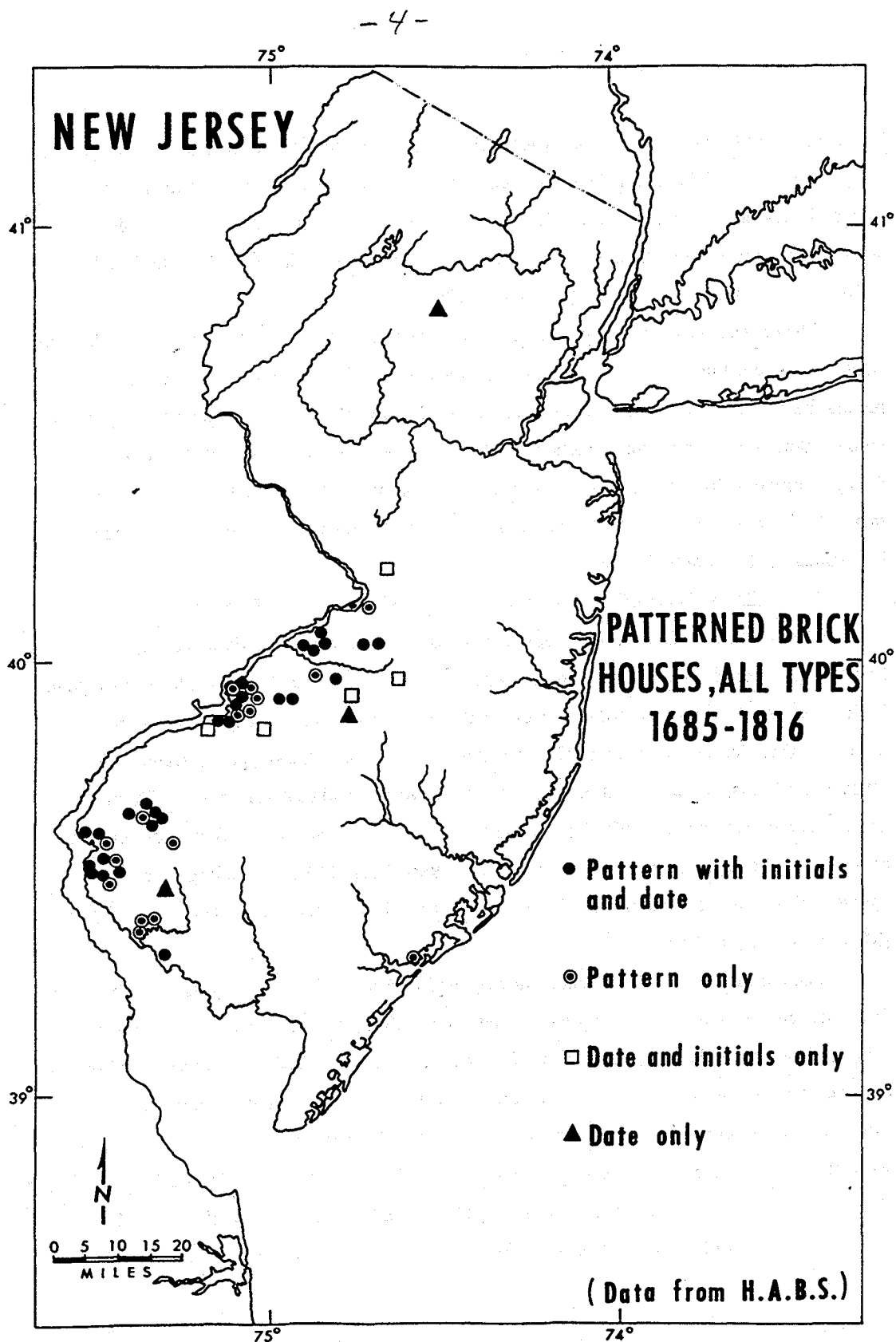
INTRODUCTION

This report is intended to supplement and not supplant the work previously completed for the National Park Service on the Delsea Region. The Delsea Region of southern New Jersey has been delineated, for convenience, by the National Park Service as including large portions of Salem, Cumberland and Cape May counties [Map 1] (United States Department of the Interior, National Park Service, 1993). Geographers would term this a functional culture region, established arbitrarily for a particular reason, generally by interests outside the region. In this it would contrast with a vernacular culture region, which is what the local perception of a cultural region, "South Jersey," for example would be [Map 2] (Stansfield, 1983, 209). It is also to be contrasted with what geographers term a formal culture region, which is based on the known distribution of one or more culture traits, for example, in this case stressing cultural landscape, the distribution of patterned brick structures [Map 3] (Wacker, 1992). This is mentioned simply to indicate that regional delineations can be done in several ways and that no one way is correct or incorrect. It all depends on the purpose or purposes for the delineation (Jordan and Rowntree, 1990, 6-13). At this point, it may be noted that a more defensible boundary than the current NPS usage may be to simply define the region as encompassing the stream basins emptying into Delaware Bay. The rationale would be that early economic activity, until the revolutions in transportation wrought by the steam engine and the internal combustion engine, were riverine and coastally oriented. And, indeed, local people, still have such an orientation as part of their "sense of place." Also to be noted, is that in the search for the significance of the Delsea Region, it will, on occasion, prove profitable to wander a bit outside the delineated or suggested border. Where relevant, the cultural resources analyzed will be classified in regard to the NPS American Ways of Life theme.

PRE-EUROPEAN AND PRE-AFRO-AMERICAN SETTLEMENT

A few words are in order about the physical environment of the area and Native American settlement. At the time of first European exploration and settlement the area was occupied by the Lenape or so-called "Delaware Indians." These people are certainly worthy of study but they





shared many traits with peoples found widely elsewhere in the eastern United States (Kraft, 1986, 244). There is, certainly, national significance in that the Inner Coastal Plain, through at least Cumberland County, has been shown, archaeologically, to lie within the Abbott Farm sphere. The Abbott Farm Site is, without question, of national significance in regard to the Middle Woodland Culture Period in the United States (Williams, 1994).

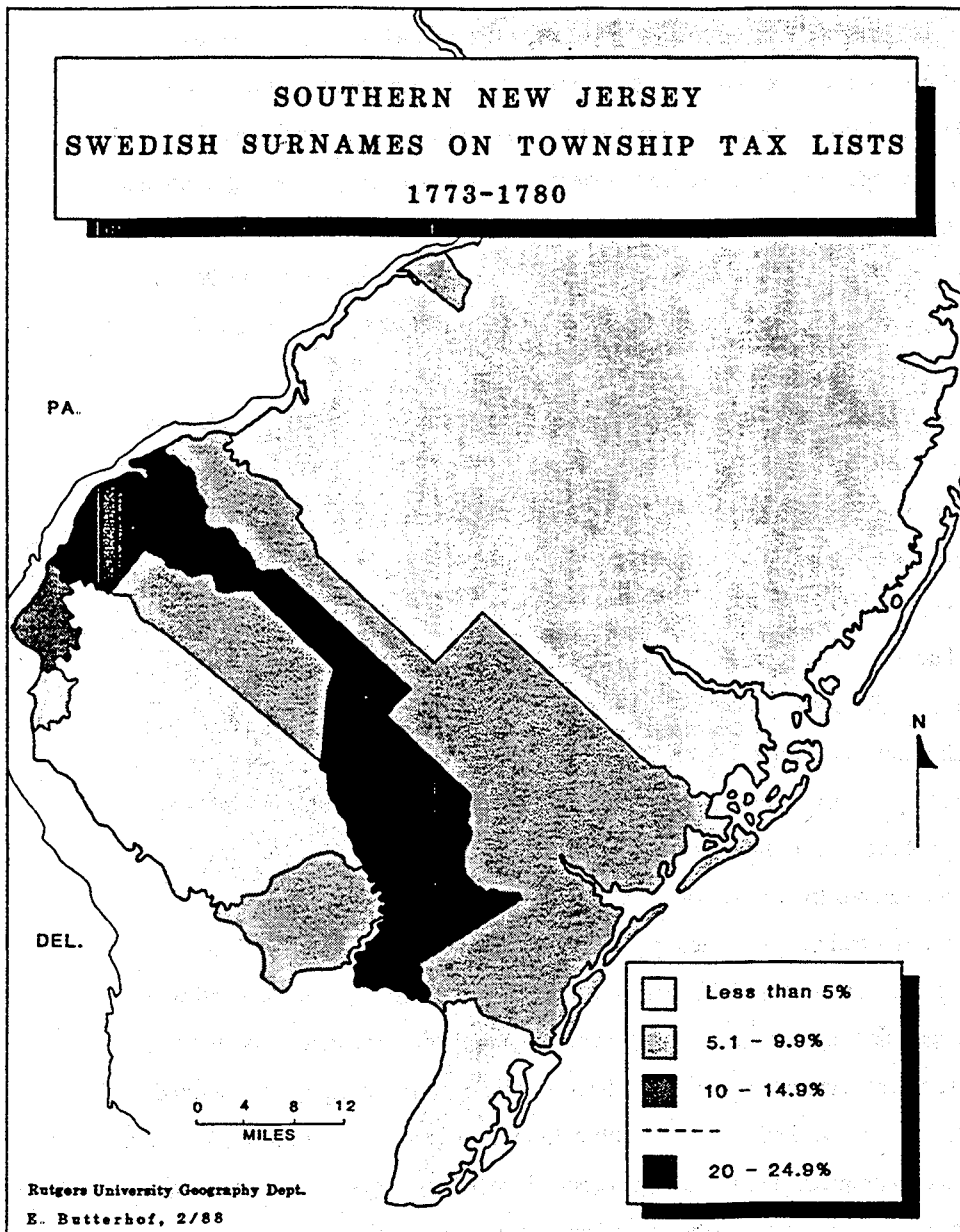
The physical environment perceived and experienced by the first Europeans to visit the area (there is an interesting report by engineer-cartographer Peter Lindestrom in 1654) was only remarkable in that there were many contrasts with the European homeland, especially in regard to climate. Similar environmental conditions could and can be found widely outside the region. One phenomenon, however, stands out as not only of national but of international significance and that is the famous spawning run of the horseshoe crab in Delaware Bay, which is of inestimable importance to the Atlantic Flyway.

EARLY EUROPEAN AND AFRO-AMERICAN SETTLEMENT

It is my belief that the greatest national cultural significance to be attributed to the Delsea Region stems from its association with the Swedish and Finnish occupation of the lower Delaware Valley after 1638 and their contributions, especially in material culture, which had profound implications for the settlement of much of the United States east of the steppe grasslands. The Swedes and Finns, of course, settled primarily on the western and southern shores of Delaware Bay and came relatively late (1660's) to settle on the New Jersey side, only a few years before the area began to be occupied by English Quakers (Wacker, 1975a, 169-172). In large part, the sphere of Swedish settlement in New Jersey lay immediately in or peripheral to the Delsea Region [Map 4] (Wacker, 1988).

The contributions to American culture by the Swedes and Finns (largely, apparently, by the Finns) has been recently set forth by Jordan and Kaups (1989). Basically, what they say is that Europeans coming to North America came from largely long-settled deforested areas. The Finns, however, were knowledgeable woodsmen, practicing a migratory slash-burn farming. By association and intermarriage with, and under the political dominance of the Swedes, the Finns soon simply began to be called "Swedes." Indeed, in the Delsea Region, the "Swedes" were identified by others as being a distinct cultural group into at least the 1750's (Ellis, 1945, 183).

According to Jordan and Kaups, the Finns and Swedes imparted several material culture



traits which allowed a much more rapid expansion to the interior than would have been the case if other European precedents had been followed. One of these was the log house, with notched timbers joined at the ends and with other distinctive constructional details. Log construction allowed a very rapid movement to the interior, well in the van of people who depended on sawed timber for house construction. From Pennsylvania south the American frontier moved rapidly to the interior, allowed by the relatively inexpensive and rapid construction of log dwellings.

A major difference separating the American pioneer log house from its European precedents was that the Finnish structures were entered at the gable end, while in America the British precedent of entering opposite the gable end became fashionable early on. This makes the Delsea Region's late seventeenth century Cesar Hoskins log house, which is already on the National Register, with its original gable-end entrance, of true national significance.

Also of enormous significance to the movement of the American frontier to the interior was the use of the so-called "Virginia" rail fence, which consisted of rails split from trees and laid in a zig-zag fashion. In early New Jersey these were called "worm" fences. As livestock in the earliest years foraged in the woods and in unfenced areas, the rapid and inexpensive construction of fences to protect growing crops was an absolute necessity. By 1870 it was so common as to be termed "the national fence." The earliest documentation of such a fence is for the Delsea Region near Salem, in 1685. In terms of European precedent the only antecedents appear to be from the northern Scandinavian Peninsula (Jordan and Kaups, 1989, 105-112). I don't know how one deals with such a transitory feature on the landscape but I do know that the largest investment by farmers was generally in fencing and that this fence, brought by Swedes and Finns and first identified in the Delsea Region is truly of national significance.

Although the Swedes had not permanently occupied the New Jersey side of the Delaware until the 1660's, they did establish a fort, Elfsborg, south of Salem in 1642. The exact location is not known today but it certainly is of archaeological interest and may lend one other aspect of the Delsea Region's environment regional significance: the mosquito. Fort Elfsborg was abandoned, supposedly because the troops could simply not put up with them (Lindestrom, 1925, 157). It is to be noted that since Peter Kalm made many comments about Swedish lifeways in southern New Jersey, investigation may reveal a great deal about the Domesticity and Family Life theme (Benson, 1937). Also, the Swedish Lutheran Ministers wrote many reports home to Sweden including

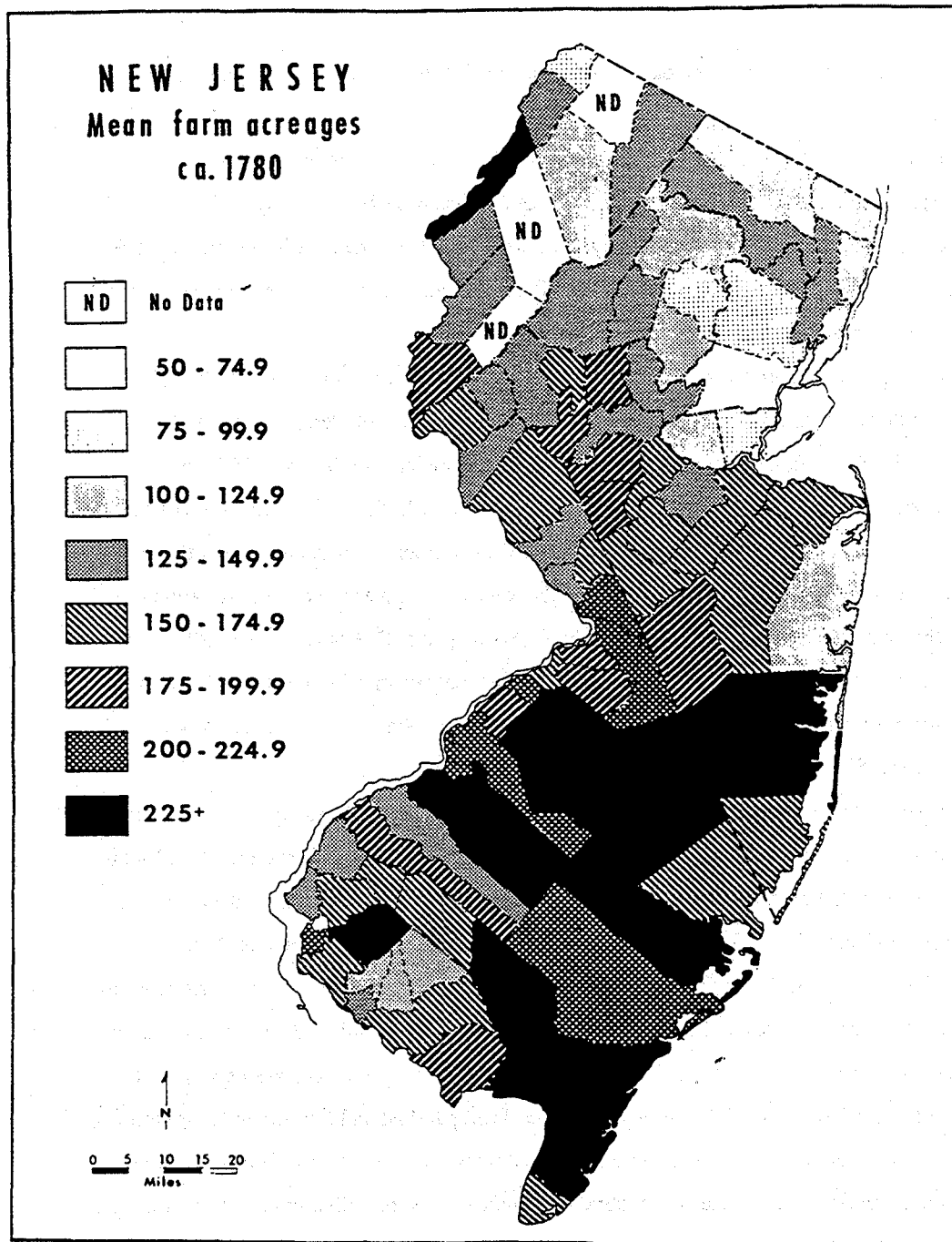
information not only on that theme but on Occupational and Economic Classes as well (Wacker, 1994).

Contemporary with Finnish and Swedish involvement in the region was an attempted permanent occupation of part of the New Jersey side of the Delaware by New Englanders in 1641. They settled near Salem but, after a brief occupation, were run off by the Swedes (Pomfret, 1956, 20-24). The site may be of some archaeological significance, yielding information on very early New England settlements.

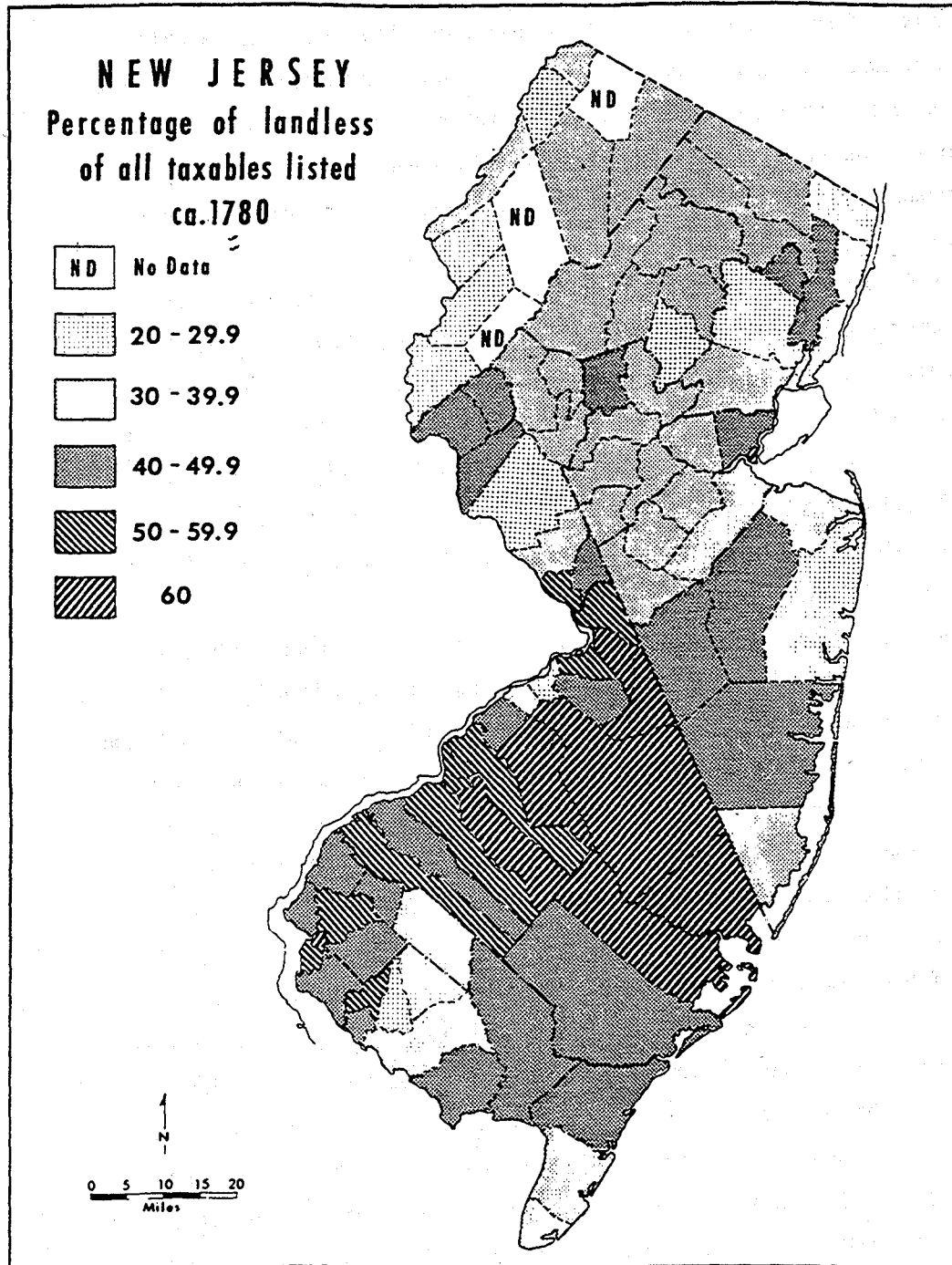
English speakers begin to envelope the Swedes in the Delaware Bay region in the 1670's and 1680's. In this case, the New Jersey side was settled earlier than the Pennsylvania and Delaware side. English Quakers begin the settlements of Greenwich and Salem in 1675, while Philadelphia was not founded until 1682 (Wacker, 1975a, 122, 125-126, 179, 313). One of the marks on the landscape of the relatively affluent Quakers of southern New Jersey is that they were able to parcel out relatively large landholdings and the township tax lists of ca. 1780 reflect quite clearly the contrasts between south and north in New Jersey [Map 5] (Wacker, 1979, 228). The history of settlement in Cape May County (1690's) and in what became Cumberland County was somewhat different, with many New Englanders early on and smaller property sizes (Wacker, 1975a, 175, 186, 187).

The settlement of Salem County would more closely mirror what was typical of Quaker settlement in southern New Jersey than would circumstances in Cumberland or Cape May. I would characterize their settlement by emphasizing the relatively large size of the farms on the excellent soils of the Inner Coastal Plain. These farms were tilled by resident landless whites [Map 6] (Wacker, 1979, 229), as, in general, but not always, the Quakers abhorred slavery. The minutes of the Quaker Meetings may reveal further information on the Domesticity and Family Life theme as well as on Occupational and Economic Classes (Myers, HSOP). Local tax lists, especially for the period after ca. 1780, can certainly shed light on the Occupational and Economic Classes theme (Department of Education, 1772-1822). Here too, the Slavery and Plantation Life theme can be brought to bear, but from a different perspective - plantations, yes, but tilled not by slaves but by a landless white underclass.

The affluent farmers established on the Delaware or on tributaries of the river or bay early on began diking the tidal marshes. Here the term bank and banking replace the terms dike and



-10-



Map 6

diking. The idea is the same, however, and that is to erect earthen dikes to keep out the tidal flow of saline water and to erect sluices to allow the fresh water to drain out during low tide. Diking had been introduced to the Delaware Bay region by the Dutch after 1655 but never really caught on until the arrival of the relatively affluent English Quakers. After that time the technology spread but was not adopted by the more conservative New Englanders of northern New Jersey until after the Revolution.

Diking established especially rich meadows and pasture devoted to the production of European perennial grasses, which replaced the less valuable American annuals. The meadows produced several crops of hay per year (because of the relative mildness of the Delsea Region's climate) and could be used to bring livestock through the winter. Pastures were used to fatten the animals. Beef and dairy products flowed to the Philadelphia market as did pork products (sheep from Cape May) and other agricultural produce. Some of this was destined for Philadelphia itself but some was exported through that port more widely, especially to the Caribbean (Wacker, and Clemens, 1994, Especially chapters 3&5).

At this point it should be mentioned that it had not been the intention of the early Quaker settlers to export through Philadelphia. They arrived before the founding of Philadelphia and fully expected that their ports of Burlington to the north and Salem and Greenwich in the Delsea Region would be the prime movers in regard to exports. What occurred was a process of hinterland piracy. Philadelphia, the capitol and port of a much larger entity, the colony of Pennsylvania, after its establishment, was able to capture the trade of southern New Jersey (Trindell, 1966a&b).

In fact, canny merchants from West Jersey's capitol, Burlington, immediately perceived that they would be out-competed by Pennsylvania's capitol and moved there. The basic physical problem for the south Jersey ports was that their hinterland of good soils (the Inner Coastal Plain) was much more shallow than that for Philadelphia and that the rivers of the Outer Coastal Plain, through which the transport of lumber and forest products would occur, largely flowed away from them to the east, and made the producers independent of their facilities (Wacker, 1991). The ports, and the story of their decline certainly appears to evoke the Urban Life theme.

What does all of this mean in regard to national significance for the Delsea Region? First of all, the rich soils and large farms of the English Quakers allowed them to early on cultivate a genteel life style and to build houses commensurate with their wealth and status (Wacker, 1979).

In this they emulated the brick architecture of Philadelphia but with a very significant regional expression and that is their famed patterned brick construction. If one maps out the patterned brick houses of southern New Jersey [Map 3], one finds them exactly in the hinterlands of the colonial ports, a mark of the regional affluence which occurred first with the direct export of local products abroad through those ports and then, by transfer, through the entrepot of Philadelphia. According to one noted pioneer in the study of the cultural landscapes of eastern North America, referring especially to Salem County, "the more intricate patterns [of the bricks] can be matched nowhere else in America (Wertenbaker, 1938, 238)." Truly this is, collectively, of national architectural significance. I would love to see, as a managed public property, a stately patterned brick house within sight of a banked tidal marsh. Here, we have an example of the Farming or Harvest Communities theme.

The colonial ports deserve some attention. I don't know what may remain archaeologically of the port facilities at Salem (there is an historic district of state level significance) but a visit some years ago suggested to me that there may be significant archaeological site on the Cohansey at Greenwich. I always tell my students that a visit to Greenwich in early spring (before the insect season) is worthwhile. There is, of course, an historic district listed on the National Register, but only the level of state significance is indicated. Today there is the one hundred foot wide thoroughfare, as planned in the 1670's, many of the eighteenth century houses and the interesting original plan of the place with long lots running off the main street leading down to the port facilities. The only other minor port in New Jersey for which we have some descriptive material of port facilities (although the archaeological potential has been destroyed) is New Brunswick (Wacker, 1982, 2-6).

While a more settled agriculture ruled on the better soils of Salem and Cumberland counties and to some degree on Cape May, in general on the Outer Coastal Plain people pursued lumbering activity (the white cedar was especially prized for its strength, light weight, resistance to rot and to combustion) and maritime activities including fishing and shellfishing. (Wacker and Clemens, 1994, Chapter 1). The latter activities continue to the present day, are interesting, giving regional flavor, but cannot be argued to be of national significance.

Some industrial activities also were in evidence, including the milling of grain, some by tidal mills and sawmilling (Pettifer, 1994). Again, certainly historically locally significant, but not

of national concern. An exception was the glass works at Wistarburg, termed by the curator at the Wheaton Village Glass Museum the most successful glass works in colonial America, operating from 1739 to 1779 (Martinelli, 1994). Before the demise of the works glassmakers familiar with German methods had moved a little north of the Delsea Region to establish additional works, and, of course, glassmaking was to hold sway as a very major industry in southern New Jersey well into this century and many of the early methods of the industry were to migrate elsewhere seeking less expensive and more reliable long-term energy sources than could be provided by the south Jersey forests (Koedel, 1979, 26-27, 104-107). The Wistar glass works are without question of national significance, although the archaeological site may have been compromised by early amateur archaeology (Martinelli, 1994). The site, however, may still have some archaeological value, as it appears to have been rather large. Included, by 1779, were 1,500 acres, of which 250 acres were cleared, 100 providing hay and pasture for the "large stock of cattle and horses employed by the Manufactory." There were two furnaces, two flatting ovens in separate structures, a store house, a pot house, "a House fitted with tables for the cutting of Glass," a stamping mill, and a rolling mill for preparation of clay. (In addition to producing glass, the works also included a pottery). There was also a "large Mansion-house," with associated structures for washing and baking. Also included were another storehouse, a stable for sixty head of cattle, a large granary and a wagon house (Palmer, 1989, 11). As this was a self-contained community, it could be said to be an interesting example of the Industrial Town theme.

An intriguing connection with the Wistar operation is that the German glassworkers, who lived in Friesberg, occupied log structures with roofs projecting opposite the gable end. This does not appear to have been a Fenno-Scandian introduction and in northern New Jersey, at least, where we have descriptions of more sophisticated log houses, the feature is called a piazza (Wacker and Trindell, 1969, 252-253). Whether this is significant as an early introduction of a new architectural feature I do not know.

THE NINETEENTH CENTURY

The primacy of Philadelphia in the region and the decline of the colonial ports tended to make southern New Jersey a relatively isolated place. Agriculture, exploitation of forest and marine resources and the glass and iron industries (these latter two being largely north of the Delsea Region) sustained the area. Within the Delsea Region in the 1830's Millville did have its grain

milling (with six runs of stones), eight sawmills, a carding machine, a blast furnace and two glass manufactories. Bridgeton also had an iron works and included a nail factory and a foundry. These are examples of the Industrial Town and Urban Life themes but cannot be said to be of national significance (Gordon, 1834, 108, 180).

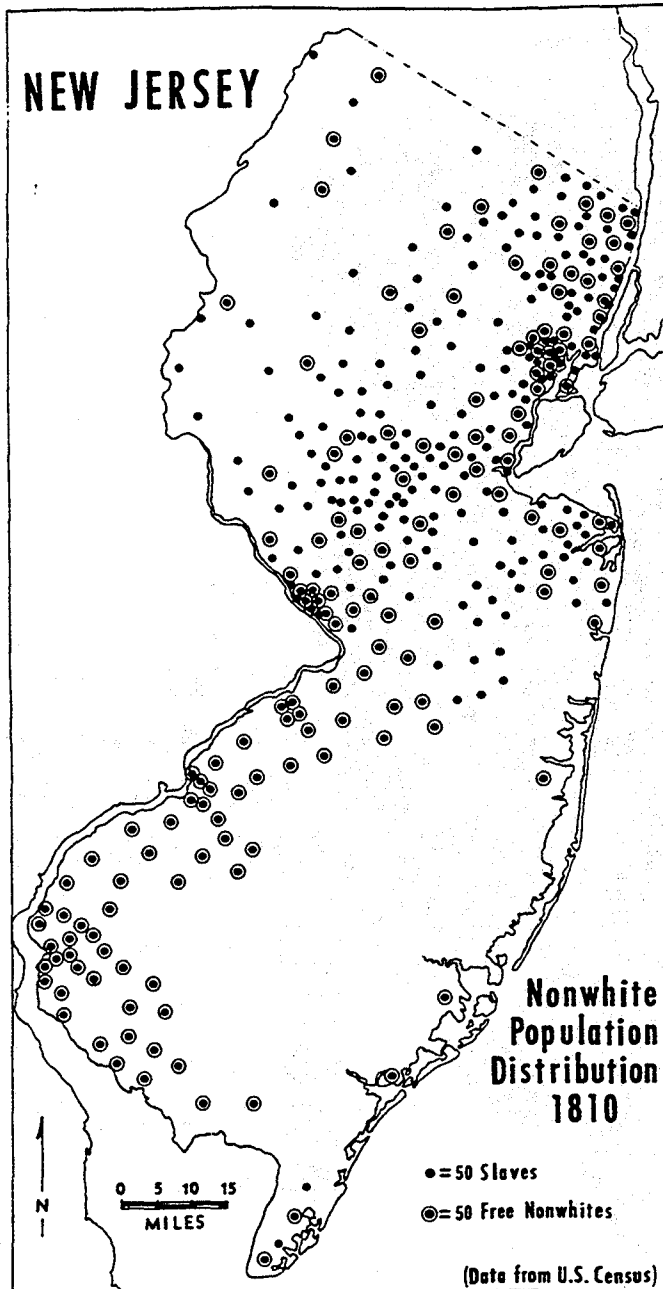
However, the founding of a company in Bridgeton during the Civil War era may well have national significance and certainly adds to the Industrial Town theme. This was the Ferracute Machine Company, founded originally as a machine shop by a transplanted Ohioan, Oberlin Smith, in 1863. This grew into a company which specialized in improving presses dealing with sheet metal. Smith held numerous patents on these improvements. The nearly complete records of this company list customers all over the world. As early as 1876 Smith was shipping to Australia and in that year he earned a medal at the Centennial Exposition in Philadelphia (also bringing back to Bridgeton the Centennial building of Horace Greeley's newspaper and adding it to his plant). Successful sale of minting presses and their assemblage in China (at Chengtu) added to Ferracute's international reputation in 1898. Subsequently the company set up complete mints in Potosi, Bolivia (famous since early colonial times for its production of silver and coinage) and in Honan Province, China. Ferracute coinage presses were also purchased by Japan, Italy, India and Peru. The company is, therefore, of some interest to at least the international community of numismatists (Cox and Malim, 1985, 1-5, 9-12, 16, 19, 21-22, 25, 71-72). I understand that much of the fabric of the manufacturing operation is extant and that there already have been discussions concerning the site with the Park Service and also that Oberlin Smith has an even wider claim to fame as an inventor (Brill, 1994).

But we must admit that in the nineteenth century southern New Jersey in general and the Delsea Region in particular did not have the explosive growth of areas farther to the north fueled by construction of canals and railroads, the expansion of manufacturing, large scale European immigration and the massive growth of urban places. Thus, a comparative dearth of data for the Industrial Town and Urban Life themes.

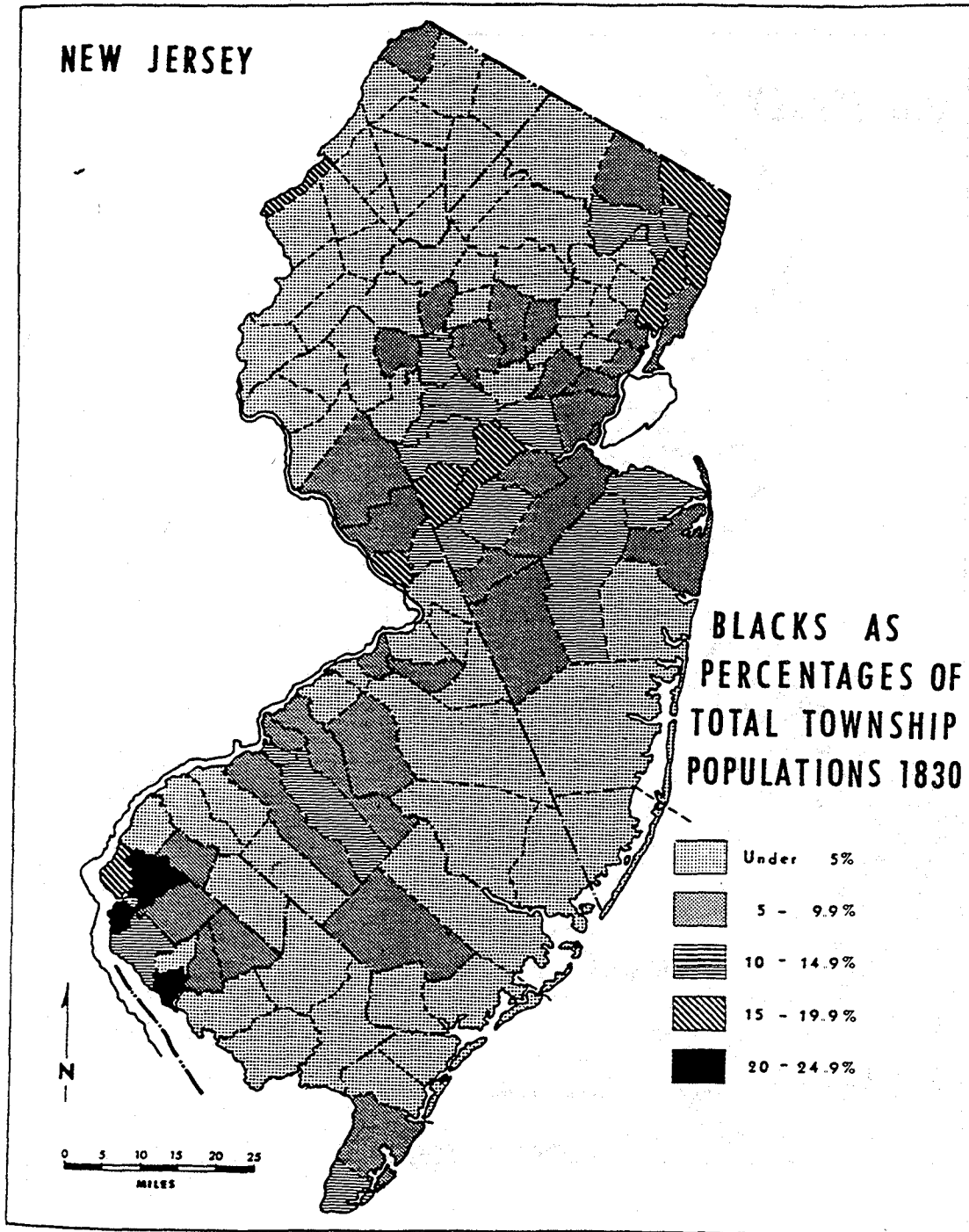
However, some interesting changes did occur in the Delsea Region. One of these concerned a change in population patterns. As mentioned above, Quaker-occupied southern New Jersey was characterized by few Afro-Americans (who were, largely, free) and by a white landless agricultural labor force. Indeed, the censuses of 1726, 1738 and 1745 show less than five percent

Afro-Americans in the Delsea Region. For example, in Salem County (which then included Cumberland) in 1726 there were only 150 Afro-Americans out of a total population of 3,997. By way of contrast, in Dutch-settled Bergen County, there were 492 (largely slave) black inhabitants out of a total of 2,673 (Wacker, 1975a, 413-417). By 1772 the Afro-American population of Salem (without Cumberland) and of Cape May exceeded five percent and these numbers kept climbing. By 1810, when we have census data by township, it can be seen that the black population of southern New Jersey was to be found largely in the Delsea Region, with concentrations especially in southern Salem County (Map 7). These numbers and percentages intensified in the next two decades, as revealed by the census of 1830 (Map 8). In general, sex ratios indicate a heavy dominance of males in the rural areas, where employment opportunities for free black males were concentrated. Indeed, at least to the eve of the Civil War an influx of Afro-Americans to the Delsea Region was in effect. By that time, for example, in rural Mannington Township, Salem County, long an area of relatively dense Afro-American occupation, almost twenty-one percent of the black population had been born in Maryland and about half that number in Delaware. Almost thirty-one percent of the black population of Mannington were property owners and in the case of about a third of the property owners neither husband nor wife had been born in New Jersey (Wacker, 1975b, 46, 50-51, 65). Quaker southern New Jersey and Salem County, in particular, were well-known refuges for runaway slaves. There has been a survey of Afro-American historical sites in southern New Jersey, as yet, unfortunately, unpublished (Craig, 1994), but it would seem to this writer that additional investigation should be attempted to ascertain whether any of these sites can be said to be of national significance. In any case, the Afro-American settlement pattern is an important component of the Ethnic Communities theme as well as the Farming Communities theme.

The Afro-American population was mostly engaged in agricultural activities. And it was in agriculture that, as the nineteenth century progressed, there were to be some major changes. Much of this was north of the region but profound changes also occurred in the Delsea Region providing the foundation of the advanced technological agriculture of the present day. The basic problem for agriculture in those parts of the Delsea region occupying the poor soils of the Outer Coastal Plain is that the soils are infertile, having little in the way of plant nutrients. They are also acidic. Most commercial crops do not do well under these circumstances. In the settlement of much of the



MAP 7



region the land use that evolved depended on the shifting of agricultural plots until soil fertility ran out, then abandonment and the return of tree cover.

Fortunately, a remedy for the situation was near at hand but was not recognized widely until the early years of the nineteenth century. The remedy was greensand marl, a calcareous substance that underlays much of the Inner Coastal Plain. The marl provided not only the nutrients needed for commercial crops but being calcareous, also solved the problem of soil acidity. Greensand marl began to be utilized in Cumberland County in 1819 and in Salem County in 1826. By 1840 it was in wide use in areas lying near enough to the marl belt to make transportation feasible. According to Carl Woodward, "the result was phenomenal. Sterile patches of sandy soil were rendered capable of sustaining admirable crops. Farm after farm supporting only a scanty growth of Indian grass scarcely repaying the labor of cropping, with the use of marl was made to yield heavy crops of clover, timothy, corn, potatoes and wheat." The use of marl was broadened by improvements in transportation and it was in wide use until chemical fertilizers replaced it early in the twentieth century. With the use of marl, agriculture boomed in the Delsea Region. The story of the use of marl is an important component of the Farming Communities theme. By about mid-century agricultural societies had been started or revived throughout Delsea, disseminating the latest in techniques and knowledge and special agricultural sections began to appear in newspapers in Bridgeton. In addition to an expansion and improvement of arable land the region began to be known for livestock, especially hogs, of monumental proportions (Woodward, 1930, 54-56, 59, 63, 72-74).

THE LATER NINETEENTH AND EARLY TWENTIETH CENTURIES

Although the problems of relative soil infertility and acidity had been solved, a major obstacle occasionally facing farmers had not - drought. In 1894, for example, there were 111 rainless days from May 1 to August 19 in Cumberland County. By 1911 Charles F. Seabrook and C.W. Skinner were experimenting with sprinkler irrigation with water derived from the abundant supplies lying beneath the sandy soils of the region. Seabrook was an agricultural entrepreneur who owned three thousand acres of land in Cumberland County by 1917 and who by 1918 had two hundred acres under irrigation, probably the largest amount at that time in the eastern United States.

In 1933 Seabrook began to pack frozen vegetables which had been produced on the 7,500 acres he owned in the region. He invited other farmers to produce, under contract, for his frozen food ventures. By 1954 more than 1,000 farmers, with almost 35,000 acres were under contract and land owned by Seabrook had expanded to 19,000 acres, "the largest mechanized farm in all America," with most of it lying in the Delsea Region, especially in Cumberland County (J. Cunningham, 1955, 14, 58-60, 64). The Seabrook operation truly was of national importance and high-tech agriculture is especially prominent in the region today (Singh, 1994). I do not know the literature or research in the areas of sprinkler irrigation and frozen food production but my guess is that work of at least national significance went on at Seabrook Farms. Much of the original physical plant of the operation is still in existence (Brill, 1974).

My suspicion as to the importance of technological advances in irrigation and frozen food production is fueled by what I do know about advances in climatological research supported by Seabrook. Climatology is that branch of physical geography which seeks to map, understand and predict similarities and differences in climate from place to place. At present, many climatologists are working to understand long term trends in climate change, witness the "Greenhouse Effect." Four decades ago the cutting edge in climatology was work in understanding the "water balance," i.e., the relationships between weather, water in the soil, water transpired by plants, and the amount of water applied by precipitation or irrigation. One can understand that this work was essential, especially in agriculture that depended on closely monitoring plant growth. It should also be noted that sandy soils, such as those covering most of the Delsea Region, are known as "droughty" soils, i.e., they do not hold water well, so that a knowledge of soil moisture and the needs of various plants is essential for sophisticated agriculture in the region. The pioneering work in this field occurred in Centreton, New Jersey and later at Seabrook Farms and was supported by Charles F. Seabrook. This is not only of national significance but of international significance (Mather, 1994; Robinson, 1994). The Seabrook story, in its many facets certainly fits into the Farming Communities theme.

Despite the great advances in agriculture in the nineteenth century, southern New Jersey in general and the Delsea Region in particular lagged in economic development. Maps of the railroad network of the period are most instructive. The area from the "corridor" between New York and Philadelphia north developed railroad connections rapidly. By 1860, for example, other than a link

from Camden to Atlantic City (to accomodate Philadelphians enjoying the coastal resort), there was little other development in southern New Jersey. In the Delsea Region Millville was connected to Glassboro, a line was under progress between Camden and Bridgeton and a line was planned to run between New Brunswick and Salem (Lane, 1939, 374). Eleven years later, the West Jersey Railroad connected Bridgeton and Millville to Camden (and ultimately, of course, by ferry to Philadelphia). Salem was also connected to the West Jersey line and Cape May was connected, by way of the Cape May and Millville Railroad, to Camden (Smith, 1871). Six years later Bridgeton had become connected to Delaware Bay through Greenwich to Bayside and through Cedarville to Bayside View on the Maurice River (Rand McNally & Co., 1877). These rail linkages were not only significant in encouraging economic development but also in encouraging the development of ethnic enclaves within the general region. Indeed, one scholar, Elizabeth Marsh, has referred to the area as an "ethnic archipelago" based partially on railroad destinations (Berger and Sinton, 1985, 97-99).

Although most of the older ethnic enclaves lie to the north of the delimited Delsea Region, three either overlap into the region or are located just outside the selected boundary. The oldest of these were the Russian Jewish agricultural settlements established in the late nineteenth century. One, Woodbine, lies entirely within the Delsea Region. Woodbine was the largest and most important of these settlements and in 1903 became the first incorporated all - Jewish municipality in the United States. Another first was the founding of the Baron de Hirsch Agricultural School, the first secondary agricultural school in the United States. Woodbine is also worthy of note in regard to its Zionist and socialist roots and its association with the Baron de Hirsch.

Jewish agricultural colonies were established in several states but nowhere else were they as successful or as numerous as in southern New Jersey. The pattern of establishment, according to one student of Jewish history (who is, himself, a product of the region) is for settlements to come about in response to a wave of anti-semitism in Europe and then to wane as the second generation left the land. The impact of the Jewish settlements in agriculture was especially in regard to the scientific development of poultry and egg production. Vineland, for example, became known as the "Egg Basket of the East." These Jewish colonies are certainly of local interest, and, given their impact on scientific poultry and egg production, they may well be of national significance. (Becker, interview, 1994; B. Cunningham, 1977, 300-304).

Seabrook Farms was responsible for the other two major ethnic enclaves which lay just outside the Delsea Region. These were the Japanese and Estonian communities. The Seabrook Japanese community was the first one established in the eastern United States. It dates back fifty years, to the waning days of World War II. Some 2,500 people were relocated, largely to a hastily built village located at Seabrook Farms, from the wartime relocation camps established to house Americans of Japanese origins. This population peaked in 1946 and has been in a steady decline since (Shimada, 1974, 23, 38-40, 42-45). The Estonian community began five years after the arrival of the Japanese and for the same purpose, to provide agricultural labor for Seabrook Farms. At its peak the Estonian population at Seabrook numbered about 650 but has been in a steady decline (B. Cunningham, 1977, 190-191). With the Jews, Japanese and Estonians, we have three good examples of the Ethnic Community theme and with the Jews (who made their own decisions in regard to land use, which the Japanese and Estonians did not), a good example of a Farming Community.

CONCLUSIONS

The Delsea Region, even narrowly defined, possesses many attributes of national and international significance. Although the region may share some attributes with the other side of Delaware Bay and with the Chesapeake, especially in regard to maritime activities, I have tried to concentrate on what is unique to the region. There can be no question about its links to the New Sweden Colony and to the material culture introduced especially by ethnic Finns in the seventeenth century (certainly shared with the other side of the bay). The log house and the worm fence allowed the American frontier to progress to the interior far more quickly than it would have had frame or masonry construction predominated and fencing remained the expensive and slowly built post-and-rail. The only log house I know of with the original Finnish configuration of a gable end entrance exists within the Delsea region. The earliest reference to the worm or so-called "Virginia" rail fence is within the region in 1685.

Successful American glassmaking begins within the Delsea region early in the eighteenth century and the techniques used here not only diffuse north to other parts of South Jersey but elsewhere in North America. Early improvements in agriculture are of interest and the work with irrigation and food freezing at Seabrook Farms are probably of national significance and certainly merit in-depth research. The climatological research begun at Centreville and later transferred to

Seabrook are of international significance.

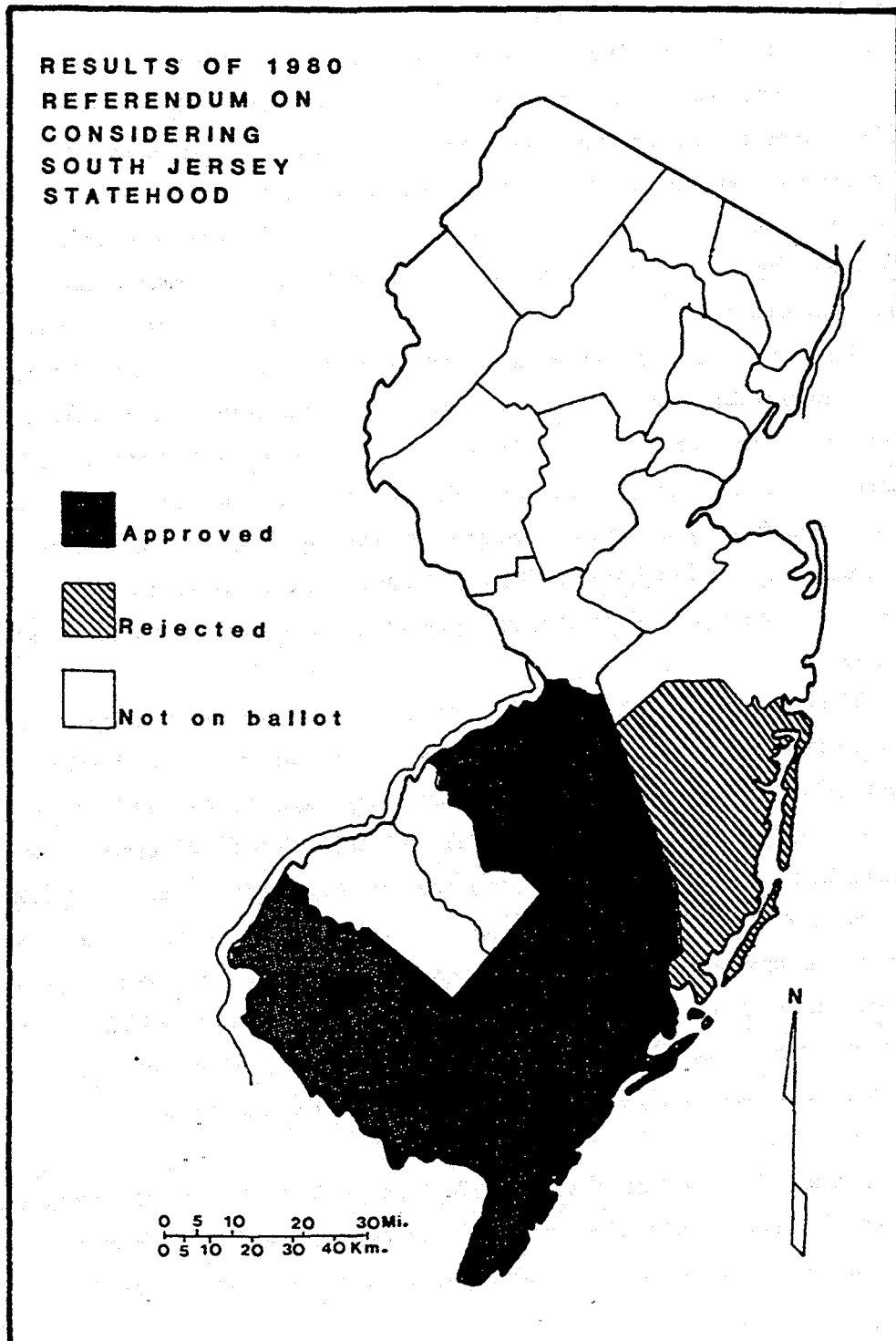
Although the region was largely by-passed by major transportation routes and by the massive urban growth and rise of manufacturing characterizing areas north of the New York-Philadelphia corridor, at least one manufacturing entity, Ferracute in Bridgeton, merits further investigation as to national significance and, perhaps international significance.

There are many other constituents of the Delsea Region that, when taken together, make a case for national significance. There are the patterned brick houses, the large Quaker-owned farms with their banked meadows (shared with the other side of the bay). There are the colonial ports of Salem and Greenwich, the latter of which has some interesting archaeological potential. Although the Quakers early-on depended on a landless white labor force, by the end of the eighteenth century the Afro-American presence was marked and reflects a very early move from southern slavery to northern freedom. Many of the rural black historical sites are still in existence and should receive far more attention than they have to date. There are other interesting ethnic enclaves, the Jewish agricultural colonies with their links to the Baron de Hirsch, Zionism and socialism and their development of modern means of producing poultry and eggs certainly at least hinting at national significance.

Without question, local inhabitants think of themselves as living in a unique region, often citing the continuance of older lifeways, such as oystering in Delaware Bay (Pettifer, 1994). One Cumberland County planning official thinks of the Delsea Region as the "Deep South" of South Jersey, having relatively little to do with areas further north (Brill, 1994). In 1980 there was even a question on the ballot in many South Jersey counties concerning secession from the rest of the state [Map 9] (Stansfield, 1983, 207-208). Surely, the Delsea Region not only contains several sites of national and even international significance but can also be viewed as one of the more unique areas of the eastern seaboard, and, the region certainly contains excellent examples of the NPS American Ways of Life themes, such as Farming Communities, Industrial Towns, Urban Life, Ethnic Communities, Domesticity and Family Life and Occupational and Economic Classes.

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MAP 9

farms in question and is the son of Holocaust survivors.

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* May be contacted directly for further information.

APPENDIX C: INVITEES TO PUBLIC MEETINGS

Belleplain State Forest
Cape May bird observatory
Citizens United to Protect the Maurice River and its
Tributaries
City of Bridgeton
Cumberland County Department of Economic Planning
and Development
Cumberland County Planning Board
Delaware Bay Schooner Project
Downe Township Planning Board
Greater Salem Chamber of Commerce
Millville Planning Department
Natural Lands Trust
National Park Service
The Nature Conservancy
New Jersey Conservation Foundation
New Jersey State Council on the Arts
Public Service Electric and Gas, Estuary Enhancement
Program
Salem County Planning Department
Watson & Henry Associates
representative local artists and fishermen

Other organizations or individuals invited to attend but
that did not sent representatives:

Cape May County Cultural and Heritage Commission
Cape May County Freeholder Board
Cape May County Historical Society

Cape May County Planning Board
City of Bridgeton, Department of Parks and Recreation
City of Millville, Mayor's Office
City of Salem, Mayor's Office
Commercial Township, Mayor's Office
Commercial Township Planning Board
Cumberland County Board of Chosen Freeholders
Cumberland County Historical Society
Cumberland County Sportsmen Association
Delaware Bay Estuary Program
Downe Township, Mayor's Office
Forsythe National Wildlife Refuge
Fort Mott State Park
Maurice River Historical Society
Maurice River Township, Mayor's Office
Maurice River Township Planning Board
Millville Historical Society
New Jersey Conference of Mayors
New Jersey Division of Travel and Tourism
Oberlin Smith Society
The Pinelands Commission
Preservation Salem, Inc.
Rutgers University Cooperative Extension Service,
Cape May County
Salem County Board of Chosen Freeholders
Salem County Cultural and Heritage Commission
Salem County Office of Economic Development
University of Delaware, Center for Historic
Architecture and Engineering

**APPENDIX D: ECONOMIC IMPACTS OF DELSEA NATIONAL PARK
BY DOUGLAS RAE**

Economic Impacts of Delsea National Historical Park

a Final Report to

**National Park Service
Denver Service Center
Denver, CO
Tel: 303-987-6634**

by

**Douglas Rae
Environmental Economist
36 Gage Street
Needham, MA 02192
Tel/Fax: 617-444-2227**

September 1995

I. Background

The National Park Service is conducting a Special Resource Study (SRS) to assess the appropriateness of including the area of New Jersey that borders the Delaware Bay from Cape May north and west to Deepwater (the "Delsea region" including portions of Salem, Cumberland, and Cape May counties) as a unit of the national park system. The SRS process has concluded that the New Jersey shore of the Delaware Bay is a nationally significant cultural landscape. The coastal plain setting with its upland, salt marsh and estuarine environments provides a setting where a variety of cultural expressions are possible and where the cultural diversity is extensive -- southern tidewater building and land use patterns including maritime traditions, New England farmsteads and land divisions, as well as the mid-Atlantic Quaker brick farm plantations. The landscapes of the study area reflect the material cultures of Native Americans and the original Dutch, as well as later settlements by African Americans, Jews, and eastern Europeans. The material culture of European settlers, in particular, provides an outstanding example of the northwest European contribution to American cultural traditions.

Given the national significance of the area, the study process next needs to determine the economic impacts on the Delsea region if it were included as a unit of the national park system. This report analyzes the possible future economic impacts of just such a designation for this area.

II. Economic Impact Analysis Approach

The analysis uses an economic impact model developed by the National Park Service. This model, known as the Money Generation Model (MGM), estimates economic impacts by measuring sales,¹ tax, and employment benefits. The model's logic and structure is straightforward. Each NPS unit is part of a local economy, which may include one or several cities or towns. When visitors from outside that local area spend money within the local area for meals, lodging, and other goods and services, it provides an economic stimulus to the local economy. That is, visitors purchase goods and services that would not be purchased by local residents, and consequently, the economy produces more sales, earnings, tax revenues, and employment than would be possible without the expenditures of the visitors.

The model requires data on numbers of visitors, visitor expenditures per day, tax rates, and multipliers. The model first calculates the direct sales impact from park visitors by multiplying the number of visitors from outside the local area times an estimate of expenditures per visitor. It then multiplies the total visitor expenditures times an output (or sales) multiplier to estimate the total increase in sales in the local economy due to park visitors. An increase in sales results in increased sales and income taxes, and the model estimates the increase in state and local tax revenues by applying appropriate tax rates. Finally, the model uses an employment multiplier to estimate the increase in jobs. Estimates of jobs reflect an average mix of full-time and part-time employment in the state.

¹Sales in this case refers to the value of goods and services, which economists typically refer to as output.

Local Area

The Money Generation Model measures the economic impacts on a local area served by a NPS unit. The Delsea region comprises portions of southern Salem and Cumberland counties and southwestern Cape May county that border the Delaware estuary. This area includes a number of small towns, but a more integrated economic entity comprises the three county area, including the city of Vineland and coastal Cape May with its hotels and restaurants.

Visitor Data

Estimating economic impacts requires data on the number of annual visitors to an NPS unit. In this case visitor data specific to the Delsea region do not exist. The approach used in this report is to rely on existing tourism data for Salem, Cumberland, and Cape May counties as a baseline. Then, the analysis examines a comparable, but more developed area of Maryland's eastern shore as a case study from which to forecast potential increases in county tourism. No case study area will duplicate exactly the natural and economic attributes of the Delsea region, but a case study coupled with information collected from tourism and recreation enterprises within the local area provide the best available estimates of changes in visitation.

Visitor Expenditures

The Money Generation Model calculates total visitor expenditures by applying per diem expenditure data to visitor-day estimates. The model recognizes that not all visitors spend the same amount of money. Visitors on day trips spend less than visitors who stay overnight in commercial accommodations. Expenditure data collected by Longwoods International, Inc. for New Jersey Department of Tourism found that in 1994 day trip visitors, who traveled over 50 miles, spent about \$52 per person. Expenditures by overnight visitors in commercial accommodations amounted to about \$98 per person per day, and overnight visitors staying with friends and relatives spent about \$78 per person per day.² These statewide data average expenditures over a wide range of tourism opportunities including visits to urban areas, coastal areas, and rural areas, but excludes visits to Atlantic City casinos.

These New Jersey estimates generally exceed figures derived from several surveys of expenditures by visitors to natural resource areas and other National Park units in the Northeast, as shown in Table 1. Kerlinger (1995) surveyed 616 visitors to Forsythe National Wildlife Refuge in Atlantic County and determined that an average of day trip and overnight visitors spent about \$41 per person, including retail purchases. Given an average stay of 2.1 days per respondent, visitors spent an average of about \$20 per person per day. However, Kerlinger did not collect expenditures for lodging and meal, but rather assumed conservative values of \$20 per person per night for commercial lodging and \$4 per meal. Consequently, these expenditure estimates may exhibit some downward bias and are well below the estimates reported above from the statewide survey.

²Information supplied by Jane Siegal, Longwoods International, Inc., Toronto, Ontario, in a telephone conversation, August 17, 1995.

A survey of 374 visitors to Minuteman National Historical Park (Butaney, et. al., 1995) found that overnight visitors to Concord or Lexington, MA, incur expenses of about \$54 per person compared to about \$9 per person for day trip visitors. A survey of 459 NJ visitors and 276 NYC visitors to Ellis Island (Goodkind & O'Dea, 1994) found that per person day trip expenditures amounted to about \$12 in New Jersey and about \$17 in New York City while overnight visitors, who stayed in hotels and motels, spent about \$50 in northern New Jersey and about \$146 in New York City. Given additional expenses to participate in many of the outdoor recreation opportunities offered in the Delsea region, including boat rentals and charter boat services, this analysis relies on the higher New Jersey state expenditure estimates. However, readers should be aware that these estimates may contain some upward bias.

The analysis recognizes that applying average expenditure estimates from a statewide visitor survey to a specific site in southern New Jersey may result in some uncertainty. This is because different sites attract different kinds of visitors and also because different sites offer different opportunities to spend money. For example, where the local area does not provide opportunities for visitor expenditures due to lack of lodging or restaurant establishments, application of these visitor expenditure estimates may overestimate actual expenditures and the resulting economic impacts on the local area. One interpretation of such estimates is that they represent a measure of potential economic benefits that can be realized over time as development proceeds.

Table 1 Visitor Expenditure Estimates (\$1994/person/day)		
Site	Day Trip	Overnight Trip
New Jersey Average ¹	\$51.54	\$97.87
Forsythe NWR ²	\$41.00	
Minuteman NHP ³	\$9.10	\$54.42
Ellis Island ⁴		
NJ Visitors	\$12.33	\$49.86
NY Visitors	\$16.84	\$145.62
Notes: 1) Day trips apply to travel of over 50 miles for New Jersey and about 30 to 100 miles at NPS sites. 2) Overnight trips reflect expenditures for commercial lodging.		
Source: 1) Longwoods International, Inc., Toronto, Ontario, telephone conversation with Jane Siegal, August 17, 1995. 2) Kerlinger, Paul, The Economic Impact of Birding on the Edwin B. Forsythe National Wildlife Refuge Area, New Jersey, 1993-1994, Cape May Bird Observatory, Cape May Point, NJ. 3) Butaney, et al., Economic Impact Analysis and Visitor Profile, Lexington Historical Society, Concord Museum, Museum of Our National Heritage, Minuteman National Historical Park, and Orchard House, for 1993-94, Bentley College, Waltham, MA, March 1995. 4) Douglas Rae, economist, based on analysis of raw data from Goodkind & O'Dea, Inc., Ellis Island Bridge and Access Alternatives, Statue of Liberty National Monument and Ellis Island, Visitor Use Survey, prepared for National Park Service, October 16, 1994.		

Multipliers

The total economic stimulus exceeds the amount spent directly by visitors, and economists have developed multipliers to estimate the total impact. The logic is fairly simple. Every dollar spent in the local area by visitors results in additional income to owners of restaurants, motels, gas stations, and other businesses; this is the direct impact of visitor expenditures. In addition, some of this additional income is spent by local businesses on other locally produced goods and services. For example, spending by visitors may cause a local restaurant to hire extra serving or kitchen help during peak season, and some portion of the wages paid will be spent on other local services, such as rent, food, gasoline, and so on. In similar fashion these expenditures then lead to further expenditures, providing further sales benefits to the local economy. It is fair to

ask why this cycle of expenditures does not go on forever. The reason is that not all of the revenues received are consumed (some may be saved) and not all are spent on goods and services produced locally (some may be siphoned off by federal or state taxes or purchases of goods and services produced outside the local area). Savings, taxes, and other expenditures on goods or services produced outside the local area represent "leakages," which eventually reduce the impact of succeeding waves of expenditures to zero. The magnitude of the direct and indirect economic stimulus is reflected in multipliers.

The Commerce Department's Bureau of Economic Analysis (BEA) has estimated multipliers that measure the stimulus effect of a dollar spent on different industries in different states. BEA output multipliers estimate the change in sales (measured as the value of goods and services produced) in all industries due to each additional dollar spent by park visitors, and BEA employment multipliers estimate the change in employment in all industries for each additional \$1 million of visitor expenditures. Estimation of multipliers is quite complex, and the magnitude of the multiplier depends on a complex set of linkages between industries.³ In general, more diverse, integrated economies with many important industries, as is often found in urban areas, generally have higher multipliers than less diverse economies in rural areas, where one or two key industries may account for a large percentage of sales.

This model relies on multiplier estimates for the two service industries that receive most visitor expenditures: 1) hotels, lodging, and amusements and eating and 2) drinking establishments. In this case the model averages BEA multipliers for these two industries to yield a single sales, earnings, and employment multiplier value for New Jersey. Table 2 summarizes these multipliers for New Jersey. The New Jersey output (or sales) multiplier is 2.15, which means that for every \$1 in direct expenditures by visitors there are an additional \$1.15 in indirect expenditures. The employment multiplier averages 34.6 jobs per \$1 million in total (direct plus indirect) expenditures. These jobs represent a mix of full-time and part-time jobs, as is typical for New Jersey.

³These industry by industry multipliers are derived from input-output coefficients estimated for models of state economies.

Table 2 New Jersey Multipliers		
Sector	Output	Employment
Hotels, lodging, amusements	2.15	30.1
Eating and drinking establishments	2.15	39.0
Average	2.15	34.5
Notes: 1) The output multiplier estimates the total expenditure that results from \$1 in direct expenditure in a local area. 2) The employment multiplier estimates the number of full-time and part-time jobs per \$1 million in total expenditures.		
Source: United States Department of Commerce, Bureau of Economic Analysis, <i>Regional Multipliers: A Handbook for the Regional Input-Output Modeling System (RIMS II)</i> , U.S. Government Printing Office, Washington, D.C., May 1992.		

Tax Revenues

The Money Generation Model also estimates local and state tax revenues due to visitor expenditures. Most tourist expenditures for lodging, food, fuel, and shopping are subject to sales taxes, and these provide the largest tax revenue category. In New Jersey the state sales tax amounts to 6 percent. In some jurisdictions there are hotel occupancy taxes added on to the basic sales tax, but there are no additional taxes on lodging in the Delsea region of Cape May, Cumberland, or Salem counties.⁴

In addition, visitor expenditures also generate earnings, a portion of which is taxable as business profit or wage/salary income to employees. The amount of business receipts subject to income tax, the "taxable income ratio," depends on state and local tax laws. These vary greatly by state, but studies suggest about 20 to 60 percent of receipts is subject to income taxes. The Money Generation Model uses a taxable income ratio of 30 percent as a midpoint estimate with a range of 20 percent to 60 percent.

The MGM applies the state income tax rate to the amount of taxable income. In New Jersey the applicable state income tax rate for average personal income amounts to about 3.5 percent.

⁴There are hotel occupancy taxes in the Wildwoods section of Cape May County, but those hotels cater mostly to beach vacationers.

Interpreting the Results

The relevance of the values estimated by the Money Generation Model depends on the perspective. To a local businessman or mayor expenditures by all non-local visitors yield economic benefits, as measured by the model. At a state level, however, the view may be different. This is because a state official may not view that portion of benefits derived from expenditures by in-state residents as a net benefit, since those expenditures for food, gasoline, and other items would probably have been spent elsewhere in the state anyway. This is simply the problem of widening the boundaries of the local area to include the whole state. At the state level, only expenditures by out-of-state visitors, a subset of those measured in this analysis, contribute sales, tax, and employment benefits to the state's economy.

Readers should also recognize that a given area or site may not be wholly responsible for the sum total of benefits reported. This is because daily tourist expenditures sometimes reflect visits to more than one site. Tourists may come to an area primarily to visit one attraction, but extend their trip to visit an additional site. For example, if a family traveled to Cumberland County primarily to visit Hancock Bridge but also extended their trip to include a visit to the Delsea region, a rigorous, marginal economic analysis would attribute all expenditures and the resulting benefits to the Hancock Bridge. In the absence of data on the primary purpose of a visit, the MGM model normally apportions tourist expenditures to specific sites according to the number of hours spent at each site. However, no information on length of stay is available for the Delsea region, and in the absence of such data this analysis assumes that a visit to the Delsea region requires a full day. This assumption means that the model attributes all expenditures on that day (or night) to the Delsea region visit.

Another caution is that treating the full amount of tax revenues as benefits is not consistent with economic theory. This is because a larger economy is not without costs. In a larger economy with more sales, earnings, and employment there is likely to be an increase in population and income that results in an increased demand for police, fire, school, recreation, and other services. These services cannot be provided without spending some of those tax revenues. Thus, the net tax revenue increase in a larger economy will be less than the initial increase, as measured by the Money Generation Model.

III. Baseline Visits in Cape May, Cumberland, and Salem Counties

New Jersey Department of Commerce and Economic Development, Division of Travel and Tourism promotes tourism and development in the state. As part of its efforts, the state commissions periodic surveys of tourists and publishes the results in annual reports. These annual reports summarize data at the state level, but the survey research firm, Longwoods International, Inc. (Toronto, Ontario), also provides some more disaggregate data to the state by tourism area and county.

The state has defined six tourism regions. The Delsea region, which comprises portions of the counties of Cape May, Cumberland and Salem, cuts across two tourism regions. The

Southern Shore region includes two of the Delsea counties, Cape May and Cumberland, and the Delaware River region includes Salem, along with Gloucester, Burlington, and Mercer counties.

New Jersey Tourism

In 1994 New Jersey received about 137.1 million day trip visitors and 38.5 million overnight visitors, as shown in Table 3. About 94 percent of the day trip visitors and about 80 percent of the overnight trip visitors were for pleasure purposes. A total of about 160.1 million visitors toured New Jersey on pleasure trips. Of this total, day trip visitors accounted for about 81 percent. In 1994 the Southern Shore region, which includes Cape May and Cumberland counties, attracted about 16.8 million day trip visitors and about 5.8 million overnight trip visitors. The Delaware River region, which includes Salem, and three other counties, attracted about 14.2 million day trip visitors and about 3.1 million overnight visitors.

Table 3 New Jersey Visitors, 1994 (millions)		
Type of Trip	Day Trip	Overnight Trip
Business	7.7	7.8
Pleasure	129.4	30.7
Southern Shore Region	16.8	5.8
Delaware River Region	14.2	3.1
Total	137.1	38.5
Notes: 1) Southern Shore region includes Cape May and Cumberland counties. 2) Delaware River region includes Salem, Gloucester, Burlington, and Mercer counties. 3) Overnight trips include stays at both commercial lodging and with friends and relatives.		
Source: Longwoods International, Inc., fax communication, August, 16, 1995.		

Delsea Region Tourism

The New Jersey tourism data reported and summarized by Longwoods International, Inc. provide a basis for developing baseline estimates of day trip and overnight visitors to the Delsea region. Cape May tourism dominates the data for the three Delsea counties due to the large number of beach trips, and the primary challenge is to estimate the amount of non-beach related tourism in Cape May county in order to provide a baseline appropriate for the Delsea region. The analysis makes use of data on trip purpose for the Southern Shore region to separate beach and non-beach visitors for Cape May. Overall, in Cape May County a best estimate is that there are about 485,000 pleasure, non-beach overnight trip visitors and about 1.4 million day trip

visitors in 1994. Cape May County attracts a large number of ecotourists, including fishermen, boaters, hunters, birdwatchers, and others. In fact, Kerlinger (1993) estimates that Cape May attracts over 100,000 birdwatchers each year during the spring and fall migrations.

Total pleasure trip visitors in Cumberland and Salem counties amount to less than half the Cape May total. Altogether, the Delsea counties account for about 686,000 non-beach, pleasure trip visitors and about 2.1 million day trip visitors. These estimates of non-beach, pleasure trip visitors provide a basis for estimating baseline economic impacts.

Data on trip purpose also indicate that about 10 percent of the pleasure visits are for touring or (non-beach) outdoor recreation. For the Delsea counties this amount to about 69,000 overnight trip visitors and about 211,000 day trip visitors. Since development of a Delsea park unit would affect only touring or outdoor recreation, these totals provide a baseline for forecasting changes in visitors attributable to development of the proposed park.

The MGM applies expenditure data on a per day basis so that it requires tourism estimates in terms of visitor-days. In New Jersey overnight visits average about 3.2 days. Thus, overnight trip pleasure visitors account for about 2.2 million non-beach visitor-days, of which about 220,000 are for touring or outdoor recreation purposes. Day trip pleasure visitors account for about 2.1 million non-beach visitor-days, of which about 211,000 are for touring or outdoor recreation purposes. Overall, the Delsea region accounts for a total of about 4.3 million non-beach, pleasure visitor-days, of which about 431,000 are attributable to touring or outdoor recreation purposes.

Table 4 Cape May, Cumberland, and Salem County Visitors, 1994 (thousands)			
County	Type of Trip	Day Trip	Overnight Trip
Cape May	Pleasure: non-beach Touring/Outdoors	1,402	485
		140	48
Cumberland	Pleasure Touring/Outdoors	371	128
		37	13
Salem	Pleasure Touring/Outdoors	339	73
		34	7
Delsea Total	Pleasure Touring/Outdoors	2,113	686
		211	69
Visitor-Days	Pleasure Touring/Outdoors	2,113	2,196
		211	220
Notes: 1) Southern Shore Region includes Cape May and Cumberland counties. 2) Delaware River Region includes Salem, Gloucester, Burlington, and Mercer counties.			
Source: Douglas Rae, economist, based on 1994 New Jersey tourism data reported and summarized by Longwoods International, Inc.			

III. Forecasting Increased Visitation Attributable to a Delsea Park Unit

The most difficult task in this analysis is forecasting the impact of a possible Delsea region park, managed and operated by National Park Service, on the number of additional visitors to the Delsea region. In the absence of historical data there are only two possible approaches. One is to examine tourism data from an area of comparable natural and cultural attributes using a case study methodology. The other is to make use of qualitative information and forecasts from knowledgeable local officials and business people. This analysis develops forecast estimates from a case study of tourism on Maryland's eastern shore and tests its conclusions based on information supplied by Delsea area officials and business people.

Chesapeake Eastern Shore Tourism Case Study

Maryland's eastern shore of the Chesapeake Bay became easily accessible to the large urban populations on the western shore with the completion of the Chesapeake Bay Bridge in the 1950s. Tourism has grown steadily over the last 40 years, and today the eastern shore's nine counties attract approximately 3 million visitors per year. The eastern shore represents a fairly mature tourism area, and thus provides an example of tourism potential in an area that compares well to the Delsea region in several key attributes.

The eastern shore is similar to the Delsea region in its estuarine ecology and reliance on touring and outdoor recreation. Maryland's eastern shore provides numerous opportunities for boating, fishing, crabbing, oystering, hunting, birdwatching, and other outdoor recreational pursuits. Its marshes provide outstanding habitat for fish, birds and other wildlife, but offer limited beaches for swimming. Rather, beachgoers prefer the Atlantic beaches, and like Cape May, the lower eastern shore's Worcester County attracts millions of visitors to Ocean City and Assateague.

Settlement on Maryland's eastern shore dates back to the 1600s, and its small town and villages provide unique cultural, historical, and architectural elements. Several communities, such as Chestertown, Cambridge, East New Market, and Princess Anne, have developed historic districts that attract thousands of tourists annually.

Finally, the region lies within 100 miles of the densely populated western shore between Washington and Philadelphia. This area includes a number of large urban population centers, including Washington, Annapolis, Baltimore, Wilmington, and Philadelphia. Roughly, 10.0 million people live within 100 miles of the upper Chesapeake counties of Cecil, Kent, Queen Anne's, Talbot, and Caroline; and, about 7.6 million live within about 100 miles of the southern eastern shore counties of Dorchester, Somerset, Wicomico, and Worcester.⁵

It should be noted that none of the areas of Maryland's eastern shore includes any NPS units. Thus, the eastern shore is not exactly comparable to the proposed Delsea region. Nevertheless, Maryland's eastern shore is sufficiently comparable that results of this case study are likely to be highly useful in forecasting tourism potential for the Delsea region.

Eastern Shore Tourism Data

The Maryland Office of Tourism and Development estimates total tourism based on a survey of visitors who traveled more than 50 miles. This survey provides disaggregate tourism estimates of visitors for seven Maryland regions, including three on the eastern shore. The upper Chesapeake region comprises Cecil, Kent, Queen Anne's, Talbot, and Caroline Counties. The latter county, however, does not border Chesapeake Bay and the analysis assumes it receives minimal tourism. The southern eastern shore region comprises Dorchester, Somerset, Wicomico, and Worcester Counties. And, the Ocean City region separates out the beach tourism component of the Worcester County total from the non-beach component. Thus, Maryland's upper Chesapeake and southern eastern shore regions provide a comparable basis for forecasting non-beach tourism potential in New Jersey's Delsea region.

The 1994 tourism survey shows that the state of Maryland attracted about 18.9 million visitors. About 17 percent, 3.3 million, came for business or conventions, and about 83 percent, 15.6 million, came for pleasure. About 13 percent, 2.0 million visitors, indicated a destination in one of the upper Chesapeake counties. About 10 percent, 1.6 million visitors, indicated travel

⁵These population estimates reflect air distances, and highway distances may exceed 100 miles for some counties included in the population estimates.

to one of the southern eastern shore counties. These regional totals may include some double counting due to allowances for multiple responses for visitors traveling to counties in both regions.

There are no county level data available from the Maryland survey. However, a fair comparison with the Delsea region requires that the Maryland data reflect counties of comparable area. For purposes of comparison the analysis uses the more reliable ecotourism data for the Delsea counties of Cumberland and Salem, which comprise about 827 square miles.⁶ The two Delsea counties constitute about 46 percent of the southern eastern shore region and about 65 percent of the upper Chesapeake region (excluding Caroline County as noted above). Distributing the region's total visitors according to area yields the estimates in Table 5.

Table 5 shows that an area of the upper Chesapeake region equivalent to Cumberland and Salem counties attracts about 1.3 million annual visitors, which represents about 13.3 percent of the 10.0 million market population within 100 miles. For the southern eastern shore region, the Salem/Cumberland area attracts about 723,000 visitors, which represents about 9.5 percent of the 7.6 million market population within 100 miles. For an area equivalent to Cumberland/Salem counties, the average annual visitors across the two Chesapeake regions amounts to about 1.0 million, which is about 11.6 percent of the population within about 100 miles. Thus, the market shares for the Salem/Cumberland area range from about 9.5 percent to 13.3 percent of the market population within 100 miles. The analysis uses this range as the basis for forecasting tourism potential in the Delsea region.

⁶The tourism data for Cape May county, despite the best efforts to separate ecotourism from beach-related tourism probably still contains some degree of bias and the comparison relies on the data for Cumberland and Salem Counties.

Table 5 Maryland Eastern Shore Pleasure Visitors, 1994 (thousands)		
Region	Total Visitors	Percent of Market Population
Maryland	15,611	NA
Upper Chesapeake	2,029	20.3
Area equal to Salem/Cumberland counties	1,324	13.3
Southern Eastern Shore	1,561	20.5
Area equal to Salem/Cumberland counties	723	9.5
Average	1,795	20.4
Area equal to Salem/Cumberland counties	1,023	11.6
Market Population Within 100 miles		
Upper Chesapeake	9,984	
Southern Eastern Shore	7,604	
Notes:	1) Upper Chesapeake region includes Cecil, Kent, Queen Anne's, Talbot, and Caroline Counties, but the latter is not included in this analysis because it does not border the Chesapeake Bay. 2) Southern eastern shore region includes Dorchester, Somerset, Wicomico, and Worcester Counties. 3) The area of Salem/Cumberland County comprises about 65 percent of the upper Chesapeake region total and about 46 percent of the southern eastern shore region total.	
Source:	Douglas Rae, economist, based on 1994 Maryland tourism data reported and summarized in Maryland Office of Tourism and Development, Marketing Summary, Fiscal 1994, Annapolis, MD, and information provided by telephone and fax.	

Estimate of Delsea Region Tourism Potential

In order to provide a comparable estimate of existing market share for the Delsea region it is necessary to estimate the number of annual visitors to Cumberland and Salem Counties as a percent of the market population within 100 miles. Table 4 indicates that the total of day and overnight visitors to the two counties amounts to about 912,000. An analysis of the population of all counties within 100 miles of the study area indicates that the permanent population totals about 8.8 million, but that the summer population totals about 10.4 million. Since most of the tourism is likely to occur in the warmer months, this analysis uses the summer population figure to compute its market share baseline. Total visitors to Cumberland and Salem counties as a share of total summer population amount to about 8.7 percent, compared to a range of 9.5 to 13.3

percent market shares for the Chesapeake eastern shore case study. Based on the Chesapeake case study estimates, the potential increase in Delsea region visitors range from about 9 to 52 percent.⁷ This range is consistent with information provided by county officials and business people in the Delsea region. One manager of a tourist-related business indicated that a Delsea park would increase visitors by 30 to 40 percent.

Table 6 then applies the increment in market share, as calculated above, to the baseline estimates of ecotourism in all three Delsea counties (including Cape May) in order to forecast the increase that might result from development of a Delsea park initiative. Since a Delsea park is likely to promote primarily touring and outdoor recreation visits, the analysis applies the forecast increments only to the baseline of touring/outdoor visits and visitor-days from Table 4. The midpoint of the forecast range reflects an increase of about 84,000 ecotourism visitors per year to about 364,000 and an increase of about 130,000 ecotourism visitor-days to about 561,000.

It is important to note that there is no specific timeframe to the realization of this tourism potential. Rather, this potential is long term, and its full realization might not occur for 10 or more years after implementation of a Delsea park proposal. However, some increase in tourism is likely to occur soon after implementation of a Delsea park with additional increase over time until the full tourism potential, as forecast here, is achieved.

Table 6 Forecast of Delsea Region Tourism Potential (thousands)				
Delsea Region	Baseline	Low	High	Midpoint
Pleasure Visitors	2,799	3,043	4,243	3,643
Touring/Outdoors	280	304	424	364
Pleasure Visitor-Days	4,308	4,684	6,531	5,607
Touring/Outdoors	431	468	653	561
Market Share (%)	8.7	9.5	13.3	11.4
Ratio: Forecast/Baseline	NA	1.09	1.52	1.30
Notes: <ol style="list-style-type: none"> 1) Baseline estimates are from Table 4. 2) Market share percents are from table 5 and text of report. 3) Low and high estimates multiply the ratio of forecast market share to baseline market share by baseline estimates of visitors and visitor-days. 4) Midpoint estimates are average of high and low estimates. 				
Source: Douglas Rae, economist, based on analysis and explanations in text of report.				

⁷Calculating the ratios: $9.51\%/8.74\% = 1.09$ and $13.26\%/8.74\% = 1.52$.

APPENDIX E: FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN NEW JERSEY

Fishes

Sturgeon, shortnose*	<i>Acipenser brevirostrum</i>	E
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Reptiles

Turtle, Atl. Ridley*	<i>Lepidochelys kempii</i>	E
Turtle, green*	<i>Chelonia mydas</i>	T
Turtle, hawksbill*	<i>Eretmochelys imbricata</i>	E
Turtle, leatherback*	<i>Dermochelys coriacea</i>	E
Turtle, loggerhead*	<i>Caretta caretta</i>	T

Birds

Eagle, bald	<i>Haliaeetus leucocephalus</i>	E
Falcon, Am. peregrine	<i>Falco peregrinus anatum</i>	E
Falcon, Arctic peregrine	<i>Falco peregrinus tundrius</i>	T
Plover, piping	<i>Charadrius melodus</i>	T
Tern, roseate	<i>Sterna dougallii dougallii</i>	E

Mammals

Bat, Indiana	<i>Myotis sodalis</i>	E
Cougar, eastern	<i>Felis concolor couguar</i>	E+
Whale, blue*	<i>Balaenoptera musculus</i>	E
Whale, finback*	<i>Balaenoptera physalus</i>	E
Whale, humpback*	<i>Megaptera novaeangliae</i>	E
Whale, right*	<i>Balaena glacialis</i>	E
Whale, sei*	<i>Balaenoptera borealis</i>	E
Whale, sperm*	<i>Physeter catodon</i>	E

Invertebrates

Dwarf wedge mussel	<i>Alasmidonta heterodon</i>	E+
Beetle, northeastern beach tiger	<i>Felis concolor couguar</i>	T+
Butterfly, Mitchell satyr	<i>Neonympha m. mitchellii</i>	E+
American burying beetle	<i>Nicrophorus americanus</i>	E+

Plants

Pogonia, small whorled	<i>Isotria medeoloides</i>	E
Swamp pink	<i>Helonias bullata</i>	T
Orchid, eastern prairie fringed	<i>Platanthera leucophaea</i>	T+
Knieskern's beaked-rush	<i>Rhynchospora knieskernii</i>	T
American chaffseed	<i>Schwalbea americana</i>	E
Joint-vetch, sensitive	<i>Aeschynomene virginica</i>	T
Pigweed, sea-beach	<i>Amaranthus pumilus</i>	PT

STATUS

E	endangered species	PE	proposed endangered
PT	proposed threatened	+	presumed extirpated
T	threatened species		

* Except for sea turtle nesting habitat, principal responsibility for these species is vested with the National Marine Fisheries Service.

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