Draft Technical Report

Phase I Cultural Resources Investigations and Phase II National Register Site Evaluations

Calvert Cliffs Nuclear Power Plant
Calvert County, Maryland

Prepared for:
UniStar Nuclear Development, LLC

Prepared by:
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and Matthew G. Hyland, Ph. D.
GAI Consultants Inc.
385 East Waterfront Drive
Homestead, Pennsylvania

GAI Project No. C080212.00

August 2008

UniStar NUCLEAR

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Abstract

Between October 2006 and May 2008, GAI Consultants, Inc. (GAI) conducted Phase I Cultural Resources Survey and Phase II National Register Site Evaluations of the Calvert Cliffs Nuclear Power Plant (CCNPP), Calvert County, Maryland, on behalf of UniStar Nuclear Development, LLC (UniStar Nuclear), a subsidiary of Constellation Energy, under contracts to TetraTech NUS (Phase I) and MACTEC (Phase II). The project area encompasses an approximately 683-acre (276-hectare) parcel situated primarily south and west of the existing CCNPP facility. UniStar Nuclear proposes construction of a new nuclear power generating unit in this locality. Additional proposed project impacts include construction of ancillary facilities, temporary construction laydowns, and wetland and stream mitigation.

GAI's Phase I investigations included background research, a Phase Ia geomorphological and archaeological reconnaissance, a Phase Ib archaeological field survey and an architectural survey. The Phase I study identified archaeological sites and architectural resources over 50 years of age within the project Area of Potential Effect (APE) and assessed their potential for listing in the National Register of Historic Places (NRHP). Phase II investigations were conducted of potentially-eligible archaeological sites that were subject to project impacts, in order to conclusively determine their NRHP eligibility.

The APE for Phase I and II archaeological investigations consisted of the 683-acre project footprint. For architectural resources the APE was generally defined as extending 305 meters (1000 feet) beyond the project footprint. Within wetland and stream mitigation areas, due to the low-profile nature of proposed impacts the APE for architectural resources extended 152 meters (500 feet) beyond the project boundaries.

GAI's Phase I archaeological survey of the CCNPP project area identified 16 archaeological sites and 25 Isolated Finds. The 16 sites include 15 historic-period sites and one prehistoric site. The historic-period sites range in age from the mid-nineteenth through twentieth centuries. They consist of four domestic sites, one domestic site/artifact scatter, seven artifact scatters/field scatters, one artifact scatter with foundations, one refuse dump with an outbuilding, and one refuse dump. The single prehistoric site is an undated lithic scatter. Based on the results of Phase I survey and review by the Maryland Historic Trust (MHT), four of the 16 identified sites were recommended as potentially eligible for listing on the NRHP, under Criterion D.

At the request of UniStar Nuclear, GAI conducted Phase II testing at these four potentially-eligible historic archaeological sites (18Cv474, 48CV480, 18Cv481 and 18Cv482). Based on the results of this study, GAI recommends that one of the four sites—18Cv474—is eligible to the NRHP, under Criterion. D. Site 18Cv474 is a mid nineteenth to early twentieth-century domestic site containing the remains of a stone foundation as well as diagnostic artifacts and features. GAI recommends that UniStar Nuclear either avoid impacts to Site 18Cv474 during project construction or perform Phase III data recovery excavations to resolve adverse effects from project development.

GAI's architectural survey documented five architectural and historic properties in the project viewshed. These include two farmsteads (Parran's Park/CT-58 and Preston's Cliffs/CT-59), portions of an abandoned railroad bed (the previously-recorded, NRHP-eligible Baltimore and Drum Point Railroad/CT-1295), one recreational camp (Camp Conoy/CT-1312), and the existing Calvert Cliffs Nuclear Power Plant (CT-154). The CCNPP facility (CT-154) is recommended as Not Eligible to the NRHP. The other four resources (CT-58, CT-59, CT-1295 and CT-1312) are recommended as eligible for listing on the NRHP. Once project design has been finalized, GAI will conduct a formal assessment of project effects and present results in a separate Criteria of Effects Evaluation Report.

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Chapter 1. Introduction and Project Overview

Project Summary

Between October 2006 and May 2008, GAI Consultants, Inc. (GAI) conducted Phase I Cultural Resources Survey and Phase II National Register Site Evaluations of the Calvert Cliffs Nuclear Power Plant (CCNPP), Calvert County, Maryland, on behalf of UniStar Nuclear Development, LLC (UniStar Nuclear), a subsidiary of Constellation Energy, under contracts to TetraTech NUS (Phase I) and MACTEC (Phase II) (Figure 1-1). UniStar Nuclear proposes construction of a new nuclear power generating unit adjacent to the existing CCNPP facility. The proposed project also includes construction of ancillary facilities (e.g. cooling water intake, discharge structures and access roads), temporary laydown areas, and wetland and stream mitigation localities. UniStar Nuclear performed this study in partial fulfillment of a Federal Energy Regulatory Commission (FERC) Certificate of Public Convenience and Necessity (CPCN), under the requirements of Section 106 of the National Historic Preservation Act of 1966, as amended.

The purpose of GAI's Phase I survey was to identify archaeological sites and architectural resources over 50 years of age within the project Area of Potential Effect (APE) (see below) and to assess their potential for listing on the National Register of Historic Places (NRHP). GAI' Phase II study was designed to investigate potentially-eligible archaeological sites that will be subject to project impacts, in order to conclusively determine their NRHP eligibility.

The project area encompasses an approximately 683-acre (276 hectare**)** parcel situated primarily south and west of the existing Calvert Cliffs Nuclear Power Plant, in southeastern Calvert County (see Figure 1-1). It is bounded to the east by the Chesapeake Bay and to the west by Maryland Route 2/4. Located in a dissected upland setting, the project area encompasses woodlands, fallow agricultural fields, wetlands, and areas of disturbance associated with the existing CCNPP facility and Camp Conoy (a former twentieth century YMCA camp) (Photographs 1-1, 1-2 and 1-3).

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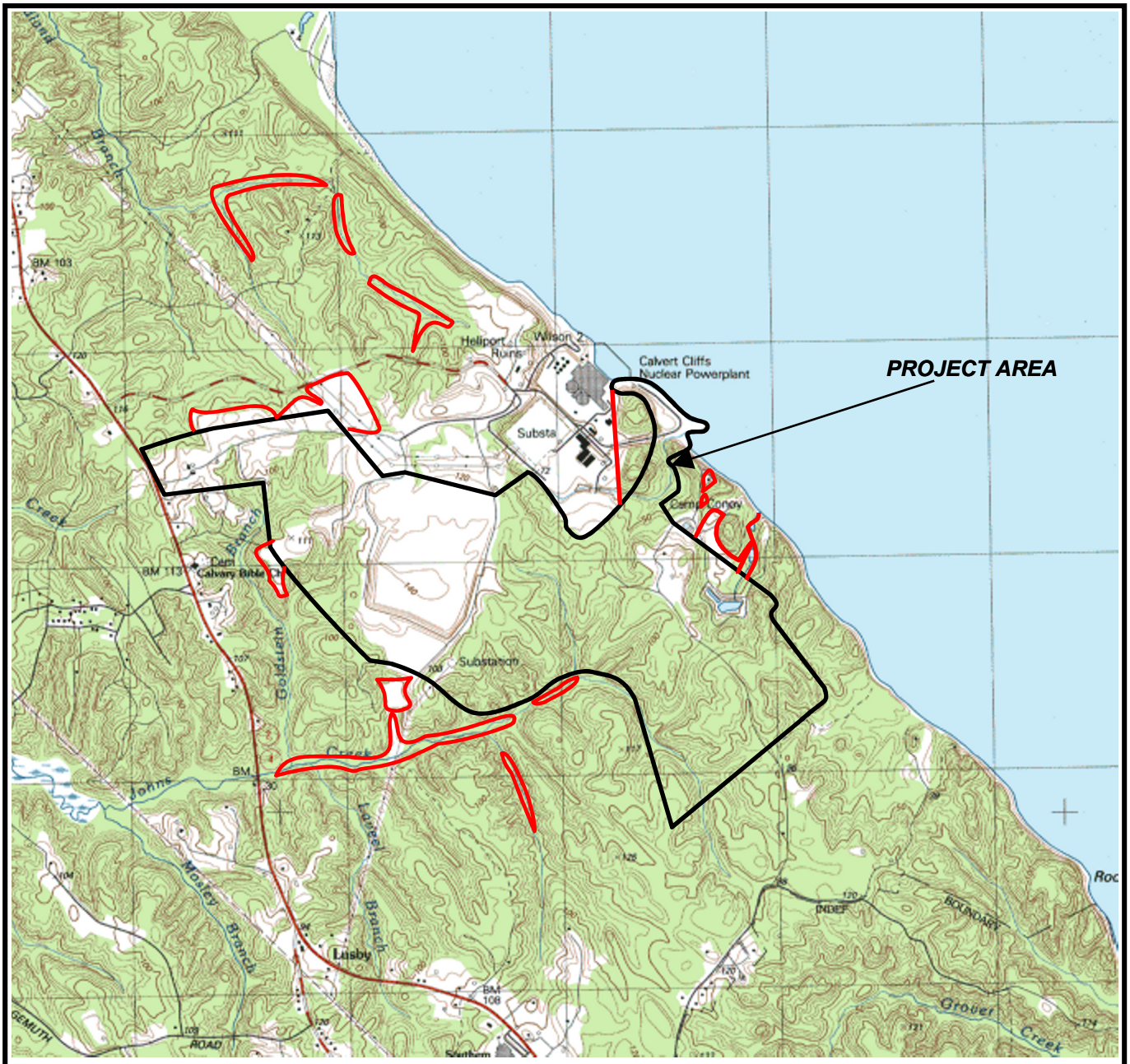
Photograph 1-1. View of Woodlands in Camp Conoy Section of Project Area, Structure (Site 18Cv474) in Background, Facing North

Photograph 1-2. View of Fallow Field and Structure 3 (Tobacco Barn) in Old Bay Farm Section (Site 18Cv480), Facing East



LEGEND:

- **INITIAL PROJECT BOUNDARY**
- **SUPPLEMENTAL PROJECT BOUNDARY**

SCALE 1:24 000

1 .5 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10 000 FEET

1 .5 0 1 2 KILOMETERS

1000 0 1000 2000 METERS

MARYLAND

QUADRANGLE LOCATION

N

gai consultants

FIGURE 1-1. PROJECT AREA

CALVERT CLIFFS NUCLEAR POWER PLANT
CALVERT COUNTY, MARYLAND

DWN SJS	CHKD BAM
APPD. BAM	DATE 2/20/07
SCALE	As noted
DRAWING NUMBER	C060570.10.001

Photograph 1-3. View of Camp Conoy Section of Project Area Showing Gates with Picnic Pavilion and Camp Conoy Lodge in Distance, Facing East

Phase I investigations of the initial project area (a 600-acre/243 hectare parcel) were conducted between October 2006 and January 2007 (see Figure 1-1). These investigations included background research, Phase Ia geomorphological and archaeological reconnaissance, Phase Ib archeological survey and an architectural survey. Work followed GAI's Phase Ia and Phase Ib workplans, dated August 23, 2006 and October 20, 2006, respectively (Appendix B). A Phase Ia Management Summary, dated October 20, 2006, (GAI 2006) summarized the results of the Phase Ia background research and field reconnaissance. GAI presented preliminary results of the Phase Ib archaeological survey and architectural survey of the original 600-acre project area, along with recommendations for additional work, in a February 2007, Draft Interim Report (Munford and Hyland 2007) which has been reviewed by the Maryland Historic Trust (MHT) (letter dated June 7, 2007) (Appendix A).

Supplemental Phase Ia and Ib studies of an additional 83 acres (36 hectares) of new project areas (proposed intake construction, laydown areas and wetland/stream mitigation localities) were performed in several episodes between March and May, 2008, during the course of Phase II investigations (see Figure 1-1). Results of this supplemental work are included in the current report.

GAI conducted Phase II National Register Site Evaluations of four sites (Sites 18Cv474, 18Cv480, 18Cv481 and 18Cv482) within the project area between March 10 and May 5, 2008. Phase II testing was conducted in accordance with GAI's February 19, 2008, Phase II scope of work (see Appendix B). Preliminary results of this study were presented in a brief Management Summary, dated May 12, 2008 (GAI 2008).

This technical report, incorporating data contained in the three previous documents, presents the methods and results of GAI's Phase I Cultural Resources Survey and Phase II National Register Site Evaluations and provides recommendations on 1) the eligibility of identified cultural resources to the NRHP; 2) the potential effects of the proposed project on these resources; and 3) the need for site avoidance, additional cultural resources investigations, or other measures where projects effects may be adverse.

Area of Potential Effect

The Area of Potential Effect (APE) for GAI's Phase Ia reconnaissance and Phase Ib archeological survey consists of the 683-acre (276-hectare) project footprint as delineated by UniStar, TtNUS and MACTEC.

The APE for the Architectural Survey represents the viewshed of the proposed project area. In general, the APE for architectural resources is defined as extending 305 meters (1,000 feet) beyond the boundaries of the project footprint. Because proposed impacts within supplemental wetland and stream mitigation localities (approximately 44 acres/18 hectares) will be low-profile in nature and will

have little likelihood to cause adverse effects, the APE for architectural resources in these areas extends 152 meters (500 feet) beyond the project footprint.

Summary of Results

Phase Ia Cultural Resources Investigation

Phase Ia investigations of the initial project APE, conducted in October 2006, included background research and a geomorphological and archaeological field reconnaissance. Supplemental Phase Ia reconnaissance of Supplemental project locations occurred in March 2008.

Phase Ia background research indicated that two previously-recorded architectural resources—Parran's Park (CT-58) and the Calvert Cliffs Nuclear Power Plant (CT-154)—are located within the project footprint and one additional resource—Preston's Cliffs (CT-59)—has been recorded immediately to the north. GAI's initial Phase Ia field reconnaissance identified surface remains of five previously-unrecorded historic archeological sites as well as five buildings over 50 years of age (Structures 1, 2, 3, 4 and 5). This reconnaissance also identified portions of the National Register-eligible Baltimore and Drum Point Railroad (CT-1295/18Cv172), an abandoned railroad berm previously documented in other portions of Calvert County but not mapped or recorded in this locality. One of the identified structures (Structure 4, tobacco barn) had been previously recorded as part of Parran's Park (CT-58A). Reconnaissance of Supplemental Phase I test areas in 2008 confirmed the presence of one additional structure (the Eagle's Den) within the expanded project footprint. This structure was evaluated as part of Camp Conoy (CT-1312) during GAI's 2006 architectural survey of the project area.

Geomorphological reconnaissance delineated areas of disturbance, documented soil profiles to evaluate landform age, and identified landforms with a potential for archaeological resources. This study concluded that the project area has no potential for deeply buried archeological sites.

Based on results of the Phase Ia study, GAI determined that the 683-acre (276-hectare) project area contained approximately 224 acres (91 hectares) of moderate to high archeological potential requiring systematic shovel testing during Phase Ib investigations. In accordance with state guidelines (Shaffer and Cole 1994), the remaining 459 acres (186 hectares) of the project area were excluded from subsurface testing due to slopes in excess of 10 percent, disturbances (largely associated with construction of the existing plant facility), or the documentation of wetlands or recent deposits.

Phase Ib Cultural Resources Investigation

GAI conducted Phase Ib archeological survey of the initial project area (600 acres/243hectares) between November 14, 2006, and January 24, 2007. Supplemental Phase Ib survey of new project areas (83 acres/36 hectares) was performed between April and May, 2008, during the course of Phase II investigations. In total, Phase Ib fieldwork involved the excavation of 4,219 shovel test pits (STPs) within approximately 224 acres (91 hectares) of moderate to high archeological potential. Phase Ib shovel testing resulted in the identification of 16 archeological sites and 25 Isolated Finds. Figure 1-2 depicts Phase Ib testing locations and identified archeological sites. Phase Ib survey results are summarized in Table 1-1.

DRAWING NUMBER C080212-00-000-00-C-B002

DATE: 07/28/08

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APPROVED: —

CHECKED: — 07/28/08

DRAWN: JL

CAD FILE NAME: C080212-00-000-00-C-B000.DWG

CCNPP
CT-154

18CV490

CAMP CONOY
CT-1312

CHESAPEAKE BAY

PRESTON'S CLIFFS
CT-59

PROJECT BOUNDARY

STRUCTURE #1

18CV484

18CV478

18CV483

STRUCTURE #2

PROJECT BOUNDARY

18CV482

18CV485

18CV479

18CV474

BALTIMORE AND
DRUM POINT RAILROAD
CT-1295

BALTIMORE AND
DRUM POINT RAILROAD
CT-1295

18CV475

18CV487

PARRAN'S PARK
CT-58

STRUCTURE #3

18CV486

CAMP CONOY

18CV480

STRUCTURE #5

18CV477

BALTIMORE AND
DRUM POINT RAILROAD
CT-1295

OLD BAY FARM

STRUCTURE #4

18CV481

18CV476

18CV489

LAKE DAVIES

SCALE 1"=800'

800 0 800

LEGEND

- PHASE IB TEST AREA
- DISTURBED AREA
- ARCHAEOLOGICAL SITE
- ARCHITECTURAL RESOURCE
- SUPPLEMENTAL PROJECT BOURNARY
- (2) TEST AREA NUMBER
- PROJECT SECTION DIVISION

FIGURE 1–2

gai consultants

PROJECT AREA SHOWING LOCATION OF
ARCHAEOLOGICAL SITES AND
NRHP BOUNDARY OF ARCHITECTURAL RESOURCES

CALVERT CLIFFS NUCLEAR POWER PLANT
CALVERT COUNTY, MARYLAND

GAI CAD FILE: P:\PIT\2008\C080212.00\Cadd\Dwg\C080212-00-000-00-C-B002.dwg 7/28/2008

Table 1-1. Summary of Phase Ib and Phase II Results

Phase of Work	# STPs	# TUs	# Sites	# IFs	# Architectural Resources*
Initial Phase Ib (600 acres)	3,573		14	25	5
Supplemental Phase Ib (83 acres)	646	--	2	0	--
Subtotal Phase Ib	4,219		16	25	
Phase II (4 sites)	961	46	--	--	--
Total Phase Ib and II	**5,180**	**46**	**16**	**25**	**5**

* resources surveyed within project viewshed; some include multiple structures

Based on the results of Phase Ib investigations and in accordance with MHT site assessments provided in their June 7, 2007, review of preliminary Phase Ib results (see Appendix A), four of the 16 sites (18Cv474, 18Cv480, 18Cv481 and 18Cv482) were recommended as potentially eligible for listing on the NRHP, under Criterion D. For each of these potentially eligible sites, GAI recommended either avoidance by proposed construction impacts or a Phase II National Register Site Evaluation for each of these sites. The other 12 sites were recommended Not Eligible to the NRHP and no further work was recommended at these sites. The 25 isolated finds identified do not represent significant archaeological resources and GAI, likewise, recommended no further archaeological investigations at these localities. The MHT has concurred on recommendations for the initial fourteen sites (June 7, 2007 letter, see Appendix A). GAI's 2008 Supplemental Phase Ib survey resulted in the identification of two additional sites, both of which are recommended Not Eligible for listing on the NRHP; these recommendations have not been reviewed by MHT. In total, four of the 16 sites identified during Phase Ib survey have been recommended as potentially eligible to the NRHP. Site avoidance or Phase II National Register Evaluations were recommended for each of these four sites (Sites 18Cv474, 18Cv480, 18Cv481 and 18Cv482).

GAI's architectural survey, conducted on December 5, 2006, documented five architectural and historical resources within the project viewshed. These resources, located both within and adjacent to the project footprint, consist of Parran's Park (CT-58), Preston's Cliff (CT-59), the Calvert Cliffs Nuclear Power Plant (CT-154), the Baltimore and Drum Point Railroad (CT-1295) and Camp Conoy (CT-1312) (Figure 1-2). The five resources comprise over 21 buildings/structures, including the five buildings (Structures 1-5) identified during GAI's Phase Ia reconnaissance. GAI initially recommended that three of these resources—Preston's Cliff (CT-59), the Baltimore and Drum Point Railroad (CT-1295) and Camp Conoy (CT-1312)—were eligible for listing on the NRHP (Munford and Hyland 2007). In their review of architectural survey results, MHT (letter dated June 7, 2007, see Appendix A) concurred with these recommendations and additionally recommended that a fourth resource, Parran's Park (CT-58), is NHRP-eligible. Based on results of the architectural survey and MHT's assessments, a total of four architectural and historic resources are recommended eligible to the NRHP. Following clarification of proposed project impacts, GAI will conduct an assessment of effects for the following four architectural and historical resources: Parran's Park (CT-58), Preston's Cliff (CT-59), the Baltimore and Drum Point Railroad (CT-1295) and Camp Conoy (CT-1312). The assessment of effects for these resources will be submitted as a separate document.

Phase II National Register Evaluations

At the request of UniStar Nuclear, GAI conducted Phase II National Register Evaluations of four archaeological sites (18Cv474, 18Cv480, 18Cv481 and 18Cv482) identified during Phase Ib survey that could not be avoided by project construction (see Figure 1-2). This study included site-specific archival research, fieldwork and laboratory analysis. Phase II fieldwork, performed between March 10 and May 3, 2008, consisted of close-interval shovel testing and test unit excavations at each site. As shown in Table 1-1, this work included excavation of 961 STPs and 46 Test units.

Based on the results of this study, GAI recommends that one of the four sites, Site 18Cv474, is eligible to the NRHP under Criterion D. Site 18Cv474 is a mid-nineteenth to early-twentieth-century domestic site centered on the remains of a stone foundation and containing diagnostic artifacts, and features. The site has good integrity and a potential to yield additional dateable artifacts and features which may address research questions relating to nineteenth-century domestic agricultural sites in the region. Because of its recommended eligibility, GAI recommends that UniStar Nuclear either avoid impacts to Site 18Cv474 during project construction or perform Phase III data recovery excavations to resolve adverse effects from project development.

The other three sites (18Cv480, 18Cv481 and 18Cv482) are recommended as Not Eligible to the NRHP under Criterion D. Based on this assessment, proposed construction impacts will constitute a "No Effect" to these sites. Consequently, GAI recommends no further archaeological investigations at Sites 18Cv480, 18Cv481 and 18Cv482.

Regulatory Guidelines

GAI's Cultural Resources Survey was conducted in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, guidelines developed by the Advisory Council on Historic Preservation, the amended *Procedures for the Protection of Historic and Cultural Properties* as set forth in 36 CFR 800, the Secretary of Interior's *Standards and Guidelines for Archeology and Historic Preservation* and the *Standards and Guidelines for Archeological Investigations in Maryland* (Shaffer and Cole 1994). The architectural survey was performed according to *Standards and Guidelines for Architectural and Historical Investigations in Maryland* (Maryland Historical Trust: 2000); *General Guidelines for Compliance-Generated Determinations of Eligibility* (Maryland Historical Trust: 2002); *Archeology and Preservation: Secretary of the Interior's Standards and Guidelines* (48 FR 44716-44742); *National Register Bulletin 15- How to Apply the National Register Criteria for Evaluation* (National Park Service 1992a); and *National Register Bulletin 21- Defining Boundaries for National Register Properties* (National Park Service 1992b).

Project Staff and Acknowledgements

Benjamin Resnick, M.A., RPA (Group Manager, Cultural Resources) was project manager for GAI's study. Barbara A. Munford, M.A. (Lead Archaeologist) served as project Principal Investigator for Phase I studies, was co-Principal Investigator for Phase II investigations and was a primary author for this report. Lori Frye (Lead Archaeologist) was co-Principal Investigator for the Phase II study and authored Phase II report sections. Qualifications of key project staff are provided in Appendix C.

Terry J. Newell (Archaeologist) supervised initial Phase Ib archaeological fieldwork with a crew that included Greg Sutton, Mark Frank, Robert Sabo, Kathleen Kauffman, Kathleen Lowe, Jonathan Hanna, Fred Mayhew, Laura Hronec, and Joe Fedor. Lisa M. Dugas (Archaeologist) was the supervisor for Phase II and Supplemental Phase Ib archaeological fieldwork with a crew that included Greg Sutton, Doug Jeffries, Erica Birkner, Mark Frank, Olivia Jones, Meghan Mooney, Stan Markovich, Benjamin Demchack, and Matthew Wilson. Lisa Dugas also assembled field data and figures for the report. David L. Cremeens, Senior Staff Soil Scientist, conducted geomorphological studies and contributed to report sections.

Matthew G. Hyland, Ph. D. (Architectural Historian) conducted the architectural survey, authored the architectural survey section of this document, and carried out background research and site-specific archival research. Megan L. Otten (Cultural Resource Specialist) prepared MHT Determination of Eligibility Forms for architectural resources and conducted site-specific archival research. Megan Otten

and Jared N. Tuk (Lead Architectural Historian) also contributed to the report's architectural survey sections.

Colleen Dugan (Archeologist) carried out initial Phase Ia background research for the project and performed historic artifact analysis. Marina Davis (Archeologist) conducted prehistoric artifact analysis. Anne Hennon (Laboratory Director) supervised lab work and assembled data for the report. Jody Litzinger, Isabel Pinto, Ron Erret, Steve Sarver and Lisa Dugas produced report figures.

During Phase I investigations, from TtNUS, Ross Dimmick was project manager and Kathy Roxlau served as Cultural Resource Specialist for the project. From Constellation in support of UniStar Nuclear, Yvonne Abernethy and Carla Logan served as project managers for GAI's study. Mark Hunter, of Unistar Nuclear, was the project liaison at CCNPP during Phase I fieldwork and facilitated the field crew's daily access within the project area.

For Phase II studies, Mike Lukey (MACTEC) was the project manager and Pat Garrow (MACTEC) was the project's cultural resource specialist. For UniStar, John Price (UniStar) and Yvonne Abernethy (Constellation) provided project oversight. Jerry Crush (UniStar) and Mark Hunter (UniStar) alternately served as crew's daily on-site sponsors at CCNPP during Phase II fieldwork.

Kirsti Uunila (Calvert Cliffs Department of Planning and Zoning) generously shared her knowledge of Calvert County history.

Chapter 2. Environmental Setting

Physiography

The project area is located in southeastern Calvert County, on Maryland's Western Shore. The county is a peninsula surrounded by the Chesapeake Bay to the east and southeast and the Patuxent River to the west and southwest; it is bordered by Anne Arundel and Prince George's counties to the north.

The project lies within the Western Shore Division (of the Chesapeake Bay) of the Atlantic Coastal Plain physiographic province (Thornbury 1965). This province is a rolling upland characterized by unconsolidated deposits of gravel, sand, silt, and clay that overlie a bedrock of schists and gneisses (Vokes 1957; Vokes 1968; Glaser 1968). These deposits range in age from Cretaceous to Holocene. In general, the topography of Calvert County slopes gently from north to south, with steeper slopes occurring along the shores of the Chesapeake Bay and the Patuxent River.

The physiographic characteristics of Southern Maryland have developed in response to Pleistocene sea-level changes coupled with repeated steepening and flattening of stream gradients (Glaser 1968). The result has been the formation and dissection of fluvial terraces, as well as the drowning of major stream valleys. Much of Southern Maryland is a well-dissected upland area with stream valleys that are commonly deep and narrow, resulting in local relief of 30 meters or more. The largest stream valleys, the Patuxent River, the Potomac River and St. Leonard Creek, drain extensive, level, undissected areas along their lower reaches.

The erosion of Coastal Plain sediments through stream dissection has resulted in relatively old sediments at higher elevations and Holocene sediments in stream valleys. Some of the higher elevations are covered by silty aeolian (wind-deposited) sediments, also known as loess deposits, presumably laid down during the Pleistocene (Hall and Matthews 1974).

Geology

The Atlantic Coastal Plain rests on a basement layer of Precambrian or early Paleozoic gneiss or gabbro (Vokes 1957; Vokes and Edwards 1974; Dent 1995). The surface of this rock formation has been eroded and it slopes southeastward from the Fall Line to the Eastern Shore. It is capped by a wedge of unconsolidated sand, clay and gravel that is thinnest near the fall line and thick nearer the shore. These unconsolidated strata are Triassic through Holocene in age and were either carried into the region by the action of ancient river systems or deposited in shallow marine environments. The uppermost deposits of the Coastal Plain province consist of Pleistocene and Holocene-aged gravels transported from the Piedmont by river systems and deposited on the Coastal Plain in the form of alluvial fans and terraces. The current surface of much of both the Western and Eastern Shore is capped by a mantle of wind-blown loess (Foss et al. 1978).

As illustrated on the geologic map of Southern Maryland (Cleaves et al.1968), the project vicinity is mapped as Late Tertiary Upland Deposits and Miocene-aged St. Mary's and Choptank Formations. Streams have cut through the Upland Deposits into the underlying St. Mary's and Choptank Formations (Glaser 1968). The Upland Deposits are composed of cross-bedded gravel, sand silt and clay varying in thickness from 0 to 15 meters (50 feet) [Upland Deposits are mapped on the highest ridgetops and upland flats]. The St. Mary's Formation occurs on lower ridges and on upper side slopes and consists of interbedded, dense, bluish-gray clay and argillaceous sand with a thickness of 0 to 24 meters (80 feet). The Choptank Formation, exposed in the valley bottoms of Johns Creek and its larger tributaries, consists of varying dense, gray-green clay to yellowish-brown sand with well-defined shell beds.

Geomorphology, Drainage, and Soils

Southern Maryland consists largely of a well-dissected upland with some areas that are less deeply dissected (Hall and Matthews 1974). The landscape west of the Patuxent River is dominated by a high, southeasterly sloping plain that is undergoing rapid dissection along its margins (Hall and Matthews 1974). East of the Patuxent River in Calvert County, in the vicinity of the current project, the Miocene St. Mary's and Choptank Formation are exposed and overlie the earlier Miocene-aged Calvert Formation (Glaser 1968).

The project area is located in the Estuarine Patuxent Drainage, and larger Chesapeake Bay drainage basin, along the western shore of the Chesapeake Bay (Maryland Archeological Research Unit 9) (Figure 2-1). St. Leonard Creek lies approximately 3.2 kilometers (2 miles) to the west. Streams within the main project area include Johns Creek, Goldstein Branch and their tributaries, as well as small unnamed tributaries of the Chesapeake Bay. Woodland Branch, a tributary of St. Leonard Creek, is the location of a proposed stream mitigation area north of the main project area. Planters Wharf Creek, also a tributary of St. Leonard Creek, lies west of the project. Streams in the general project vicinity are sluggish, due in part to the fact that many have large accumulations of silt in their valleys from historic deforestation and erosion of upland locations (Kirby et al. 1967). The lower reaches of several of the larger streams, including the Patuxent River, are estuarine and lie within the tidal zone. Several of these streams drain extensive wetlands measuring up to several hundred meters across. Within the project area, wetlands are delineated in John's Creek, Woodland Branch, Goldstein Branch and their tributaries.

The parent materials of soils in the project area formed in unconsolidated Coastal Plain sediments. The project area is mapped predominantly with the Sassafras-Matapeake Association--soils in gently sloping to steep settings, and characterized as well drained, moderately to severely eroded, with dominantly sandy clay loam to silty loam subsoils (Matthews 1971). The terrain in this dissected upland area is generally rolling, with elevations ranging from sea level up to 43 meters (140 feet).

Prehistoric Toolstone Resources

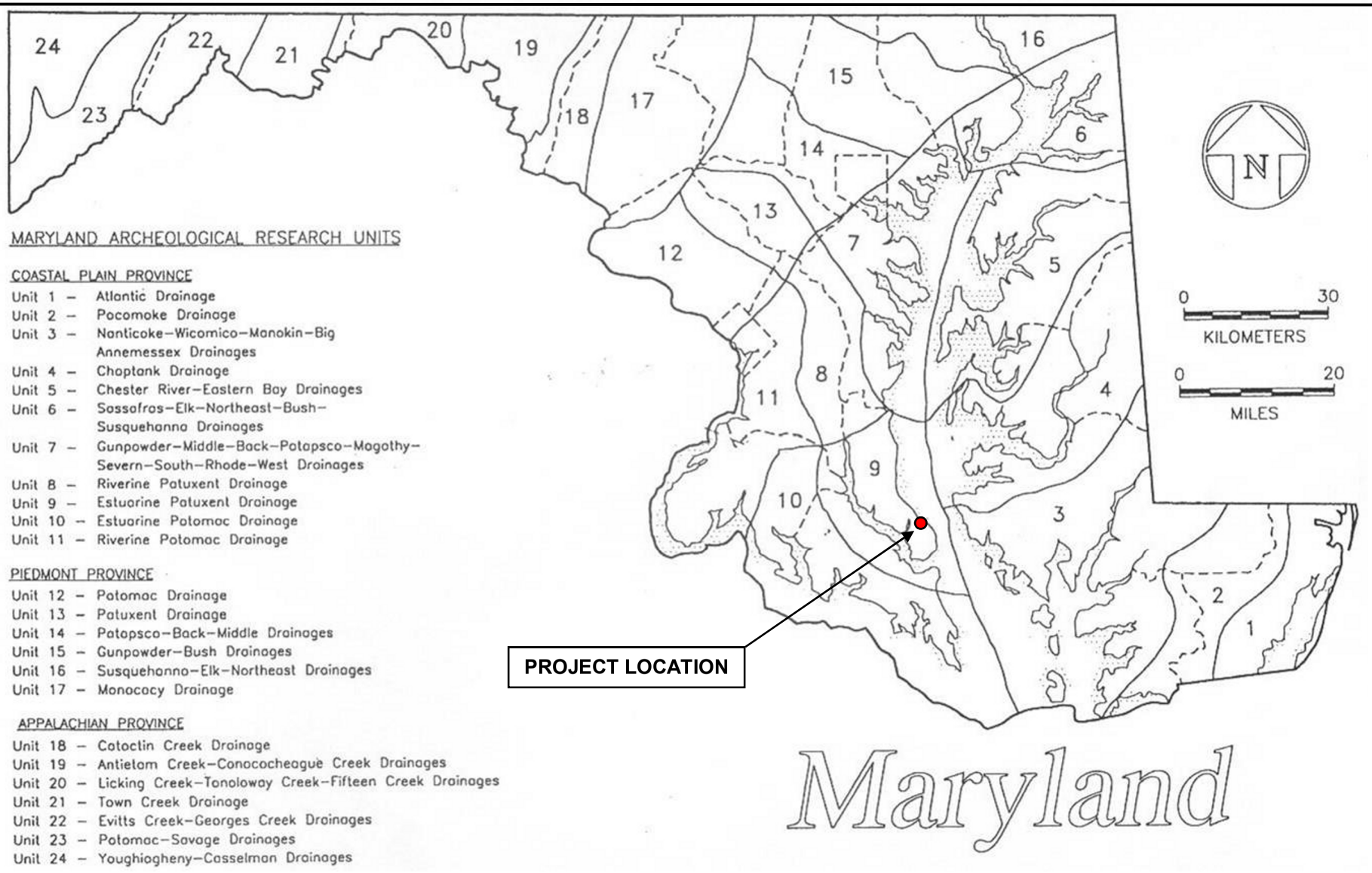
Both primary (bedrock exposure) and secondary (stream cobble) lithic sources for stone tool manufacture were available to prehistoric Native American groups living on Maryland's Western Shore. These raw material sources were utilized for the manufacture of flaked stone, cobble, and pecked and groundstone implements.

Unconsolidated fluvial Tertiary and marine Miocene formations are found west of the Patuxent River. In areas where streams have cut into these formations, streambeds contain gravel bars of quartz, quartzite, and sandstone cobbles that could have been harvested for toolstone prehistorically. Within the region, quartz and quartzite cobbles were heavily used for flaked stone tool manufacture during many periods of prehistory (Dent 1995; LeeDecker and Koldehoff 1991).

At the Fall Line where the Piedmont meets the Coastal Plain near Washington D.C., several igneous and metamorphic rock types were available for prehistoric exploitation. Here, quarries and workshops documenting prehistoric exploitation of both quartzite for toolstone and steatite for stone bowl manufacture have been recorded (Ebright 1987; Holmes 1897), circa 80 kilometers (50 miles) northwest of the study area. Outcrops of greenstone, useful for the manufacture of groundstone tools, occur further upstream on the Potomac River between Rockville and Great Falls, circa 96 kilometers (60 miles) northwest of the project (Matthews 1933; Vokes and Edwards 1974: 47-48).

Along the northern perimeter of the Chesapeake Bay, primary outcrops of ironstone, a ferruginous quartzite, have been documented (Ward 1984, 1988) approximately 125 kilometers (80 miles) northeast of the project area. The Iron Hill jasper source, near Newark, Delaware, is located another 15 kilometers (10 miles) to the northeast (Custer and Galasso 1980).

Prehistoric groups also exploited primary sources of metamorphic rocks, including rhyolites and argillites, located outside the Chesapeake region. Rhyolite is available from primary sources in the Blue Ridge Province of south-central Pennsylvania and north-central Maryland, circa 160 kilometers (100 miles) northwest of the project area (Stewart 1984, 1987) and secondary cobbles of this material have also been found on Maryland's Coastal Plain. Outcrops of argillite, more rarely used for toolstone by the area's prehistoric inhabitants, are found in the Lockatong formation in New Jersey and southeastern Pennsylvania, circa 190 kilometers (120 miles) to the north-northeast (Lothrop and Koldehoff 1994).



SOURCE: MARYLAND HISTORICAL TRUST

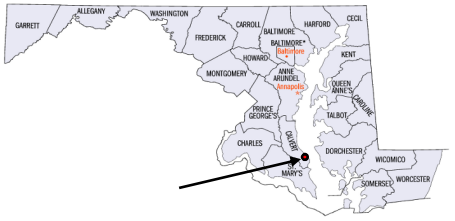


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FIGURE 2-1

PROJECT LOCATION IN RELATION TO MARYLAND ARCHAEOLOGICAL RESEARCH UNITS

CALVERT CLIFFS NUCLEAR POWER PLANT
CALVERT COUNTY, MARYLAND

Climate

Southern Maryland has a continental type climate, with well-defined seasons modified by the presence of the Chesapeake Bay, the Patuxent River, and the Potomac River (Matthews, 1971; Hall and Matthews, 1974). The modifying influence of these water bodies is most noticeable in the moderation of extreme temperatures in the areas nearby. The warmest period is the last half of July and the coldest period is the last part of January. In Calvert County, the mean annual precipitation is 109 cm (43 inches) with 49 cm (19.4 inches) of snow. Precipitation is fairly uniform in distribution throughout the year. July and August are the wettest months, and February and November are the driest. The average growing season is about 200 days.

Paleoenvironment

During the Wisconsin Glacial Maximum (circa 20,000 B.P.), sea levels fell to approximately 91 meters (300 feet) below modern levels. In Maryland, this action exposed the Chesapeake Basin and caused the Susquehanna River to flow directly to the sea. The changing climatic conditions and sea level fluctuations of the Middle Atlantic Coastal Plain influenced the local distribution of floral and faunal resources. The Maryland Piedmont, for example, would have been covered by an open spruce-pine woodland forest typical of most regions in the Mid-Atlantic region (Martin 1958; Craig 1969). The transition to an oak-hazel closed-forest environment reportedly appeared in the Susquehanna Valley after 12,750 BP (Carbone 1974).

Retreat of the Laurentian glacier from its terminus in north-central Pennsylvania caused a rise in sea levels as glacial meltwater was released. The Early Holocene rise in sea levels led to the drowning of the Potomac River and the ancestral Susquehanna River. With sea level rising an average of 1.3 meters (4.3 feet) per century between 10,000 and 6000 years ago, and at a somewhat slower rate of 1.2 meters (3.9 feet) per century from 5000 to 1000 B.P. (Colman et al. 1991), this led to a developing Chesapeake estuary. Dent (1995: 84) notes that by 10,000 B.P., the transgression had reached the mouth of modern Chesapeake Bay. Three thousand years later, waters were lapping at the mouth of the Anacostia River. By 6000 years ago, sea transgression reached Annapolis, Maryland, finally covering the entire modern Chesapeake Bay by circa 3000 B.P. These changes had obvious implications for aquatic and animal subsistence resources available to prehistoric Native American populations. Within the Chesapeake region, establishment of estuarine environments led to the replacement of freshwater aquatic fauna by estuarine species: for example, oyster beds have been dated to circa 5000-6000 years B.P. in the northern portion of developing estuary (Dent 1995: 93). Rising sea levels also resulted in the creation and expansion of interior wetlands, settings that could be attractive for deer and other species (Gardner 1987; Dent 1995: 192-193). The continuing rise in sea level and salinization encouraged the spread of populations of anadromous fish to areas further north. By approximately 3500 B.P., the range of these fish extended past the Fall Line and into streams of the Upper Potomac Coastal Plain (Gardner 1987).

Transitional environmental conditions characterized the Late Pleistocene and Holocene periods. Most scholars concur that Carbone's studies for the Shenandoah Valley (1976) are pertinent to southern Maryland (Kavanagh 1982; Steponaitis 1983). Carbone (1976) defines two major Pleistocene/Holocene climatic episodes that include the Late Glacial (ca. 15,000-8,500 B. C.) and the Pre-Boreal/Boreal (8,500-6,700 B.C.) episodes. During the Late Glacial episode, tundra conditions may have existed as far south as central Pennsylvania; and further south, a mosaic pattern occurred as mixed deciduous forests near rivers, a mixed coniferous-deciduous forest and grasslands in lowlands and valley floors, and a coniferous forest on the high ridges (Kavanagh 1982; Custer 1984:44; Carbone 1976). The faunal assemblage at this time in the Western Shore region may have included Pleistocene megafauna, although Maryland archeologists debate this point (Custer 1984; Gardner 1980; Kavanagh 1982). The changing climatic conditions and sea-level fluctuations of the Middle Atlantic Coastal Plain influenced the local distribution of floral and faunal resources (Martin 1958; Craig 1969). By 10,000-9000 B.P., most Pleistocene megafauna were extinct. Modern faunae were present in the eastern United States by 9300 B.P. (Guilday 1967).

The Pre-Boreal climatic episode was a period of transition from the late Pleistocene to the Holocene periods. Summer temperatures were warmer, while winters remained wet and cool (Carbone 1976). Temperate, deciduous species characterized terrestrial vegetation in the early Holocene. In the Shenandoah Valley, oak became the dominant species after 9500 B.P. (Craig 1969). Carbone suggests a general reduction in open habitats with Subarctic woodland in the high elevations, coniferous forests on the slopes, and a mixed coniferous-deciduous forest in the valleys (Carbone 1976:186). Beech, hickory, and chestnut all entered the Maryland region during the next 2000 years (Davis 1976). A mixed mosaic environment consisting of a fairly open spruce-pine forest mixed with deciduous trees and grasslands is suggested for the region (Gardner et al. 1979; Wesler et al. 1981). Climax forests of the Middle Holocene period developed along with the arrival of chestnut and oak. Gardner et al. (1979) suggest that the oak-hickory climax of 8000 B.P. was replaced with a southern mixed pine-oak forest by 5000 B.P. The faunal assemblage may have included moose, bear, elk, deer, and smaller game animals (Kavanagh 1982; Johnson 1986).

By 6500 B.C., the Atlantic climatic episode marked the emergence of the Holocene environment. Warm, humid conditions continued until about 5000 B.C., after which a cooling trend occurred (Custer 1984).

By 5000 B.P., tidal marsh environments were similar to those observed today in the Chesapeake Bay (Gardner et al. 1979; Wesler et al. 1981). Custer and Wallace (1982) suggest that floral and faunal species may have been more abundant and widespread during the wet conditions prevailing between 4750 and 3459 B.P. A warm, dry period lasting until around 2350 B.C. occurred in the region. Vegetation patterns at this time included the reappearance of open grasslands and the expansion of oak-hickory into the valley slopes and floors (Kavanagh 1982:9).

The Sub-Atlantic climatic episode characterizes the environment from at least 940 B.C. when modern climatic conditions were approximated (Carbone 1976). According to Carbone, short-term, minor perturbations occurred throughout the Holocene period into modern times, creating periods of environmental stress. These periods are the Sub-Boreal/Sub-Atlantic transition (3000-2600 B.P.); the Sub-Atlantic/Scandic transition (1750-1305 B.P.), and the Neo-Atlantic/ Pacific transition (870 B.P.) (Carbone 1976:200).

Dent (1995: 88-90) offers a somewhat different perspective from Carbone (1976) and others on shifting Holocene paleoenvironments in the Chesapeake region based on review of pollen core date of recovered primarily in the past 25 years. From his perspective, these data indicate that the vegetational changes began roughly 10,000-9800 years ago, perhaps slightly earlier in the southern Chesapeake region. In the latter area, a beech-hemlock-birch forest association with oak begins to displace coniferous forests; further north, oak communities complemented by birch and alder take hold. After about 8200-7600 years B.P., oak becomes the dominant species across the Chesapeake region, with an oak-hazelnut-alder association prevailing on the inner Coastal Plain of the Western Shore. Between 5000 and 3800 years ago, more mesic tree species take hold in some areas, after which deciduous forest communities establish themselves across the region until late prehistoric times. Essentially, the Chesapeake region's vegetation had largely stabilized by 5000 B.P. (Brush 1986; Kraft and Brush 1981; Stenger 1982).

At the time of European Contact, the Middle Atlantic Coastal Plain was forested primarily in deciduous hardwoods. This hardwood forest provided an abundant supply of nuts, berries, tubers and other edible wild plants. The hardwood forest would also have served as a habitat for many modern species including the ground squirrel, deer, chipmunk, turtle, weasel, and turkey. Grey wolf, elk, bison, and bear that had been common to the region were quickly eliminated by overhunting during the Contact Period.

Chapter 3. Culture History

The purpose of this chapter is to provide a general context for the Phase I investigations of cultural resources in the CCNPP project area. The culture history of Maryland's western shore reflects a long span of occupation by Native Americans, their displacement by Euro-Americans and African-Americans, and subsequent agrarian and commercial development of the region's natural resources. Both the Native American and Euro-American culture history sections focus on southern Maryland and the Western Shore of the Chesapeake region.

Native American Prehistory

Paleoindian (Before 8000 B.C.)

Humans first entered North America during the Paleoindian period which dates to before 8000 B.C. Radiocarbon dates recorded at Meadowcroft Rockshelter in western Pennsylvania have conservatively placed the site occupation between 10,600 and 12,000 years ago (Adovasio et al. 1990); occupation of the Shawnee-Minisink Site in eastern Pennsylvania has been placed between 10,000 and 11,000 years ago (McNett 1985). Although the exact date of human entry into the New World remains obscure, it is generally agreed that the arrival was from Asia via the Bering land bridge, exposed as a result of Pleistocene glaciation. The paleoclimate to which these populations were adapted was much wetter and cooler than the climate of today. Glaciers covered large portions of North America, terminating in northern Pennsylvania.

Paleoindian populations are viewed as having subsisted as relatively mobile bands of hunters and gatherers. They have traditionally been viewed as primarily dependent on the hunting of Pleistocene megafauna such as mastodon, sloth, and giant beaver. Recent evaluations of the evidence for this type of subsistence base have suggested a more generalized hunting and gathering economy (e.g., Meltzer 1988). Investigations of the Paleoindian levels at the Shawnee-Minisink Site suggest that procurement and processing of seeds, berries, and fish reflect seasonally based procurement activities in this locality (McNett 1985). Other than carbonized hickory nutshells at the Williamson Site, Paleoindian sites in the Chesapeake region have produced virtually no subsistence data. However, Pleistocene megafauna were extinct by the time of Paleoindian occupation in the Chesapeake (Dent 1995:142). In this light, more generalized subsistence strategies focusing on a variety of locally available species may have been the best available adaptation.

There are few investigated Paleoindian sites on Maryland's Western Shore, although three sites of note (found north of the current project) include the Higgins, Pierpoint, and Catoctin Creek sites. The Pierpoint and Catoctin Creek sites are located on the middle reach of the Potomac River, while the Higgins Site overlooks a tributary of the Patapsco River. The well-reported Higgins Site yielded Paleoindian artifacts recovered in a stratified context distributed across a 14-square meter area (Ebright 1992). Diagnostics included fragments of two quartz fluted projectile points, along with associated bifaces, scrapers, gravers and retouched flakes manufactured of chert and Jasper. Ebright (1992: 255) interpreted the site as a small, short-term Paleoindian campsite where activities included animal butchering, hide processing, as well as working of wood, bone and antler.

Gardner (1977) and Gardner et al. (1979), basing their models on the Blue Ridge area of Virginia, have examined various site types and their occurrence within the region in order to predict Paleoindian site location. They suggest that sources of cryptocrystalline raw material were the primary focus of these groups. Quarry-related sites are likely to occur in association with outcrops of these materials in the Blue Ridge area, and with cobble beds yielding chert, jasper, and other cryptocrystallines in the Coastal Plain. Hunting camps are to be expected in game-rich areas, such as near wetlands throughout the Eastern Shore. Base camps will be found on level ground, near game-attractive areas and water sources in the Coastal Plain. Dent (1995:127) notes that across much of the Chesapeake region, there is a reduced reliance on cryptocrystalline lithics for Paleoindian tool kits compared to the Ridge and Valley and Appalachian Plateau regions further west. Following McAvoy (1992), Dent (1995:136-139) suggests that lithic procurement would likely be only one factor affecting trends in Paleoindian site location in the Chesapeake region. Dent suggests a two-level Paleoindian settlement hierarchy, with

residential base sites like those that Williamson occupied along the inner Coastal Plain during cold or periods and along the ancestral Susquehanna River in warmer periods. At other times of the year, Chesapeake Paleoindians may have dispersed into smaller social units represented by the great majority of other small documented Paleoindian sites.

Fluted points are associated with the Paleoindian period. The projectile points for this period include Clovis, Mid-Paleo, and Dalton. Most of these points were identified in southern Maryland from studies of collections (Wanser 1982). In Maryland, as in most areas, the majority of these points represent isolated finds, limiting the evidence for subsistence activities of these populations (Wesler et al. 1981).

Early Archaic (8000-6000 B.C.)

The beginning of the Archaic period in eastern North America is generally assigned to the start of the Holocene. The warmer, drier climate that resulted from the retreat of the Pleistocene glacial ice led to the replacement of a subarctic regime with more heterogeneous forms of flora and fauna (Caldwell 1958). Gradual cultural change occurred as groups began to schedule their activities and specialize in methods of seasonal resource extraction in response to the existence of a more diversified resource base.

Within the Mid-Atlantic region, many archaeologists believe the Early Archaic represents a continuation of the basic Paleoindian subsistence/settlement pattern. This notion is suggested from a number of studies in the Mid-Atlantic region that indicate a continuity of lifeways at Paleoindian/Early Archaic sites from Delaware (Custer 1984), the Shenandoah Valley (Gardner 1980), and the Great Valley in Pennsylvania and Maryland (Stewart 1980). Population densities increased slightly and territories became somewhat more limited. The spread of deciduous forests led to a greater dispersal of game species (Carbone 1974). LeeDecker and Koldehoff (1991:7) note a strong association between later (bifurcated point) Early Archaic sites and wetland habitats, including Dismal Swamp, Zekiah Swamp, Mattawoman Swamp, Churchmans Marsh, and smaller wetlands.

Technologically, the shift in projectile points from the earlier fluted forms to notched and serrated varieties may represent a change from a thrusting to a throwing technique. Projectile point forms typical of this period include Palmer, Kirk, St. Albans, LeCroy and Kanawha types (Gardner 1980, and Dent 1995). In the project vicinity, these points have been identified in the Piscataway Creek drainage (Potter 1980), at the Accokeek Creek Site (Stephenson 1963), and in sites along the Patuxent River (Wesler et al. 1981). Nondiagnostic tools on Early Archaic sites can include bifaces, and utilized and retouched flakes. Early Archaic sites also witness the first evidence of ground stone technology. Examples include a flaked and ground celt and an axe along with abraders at the Crane Point Site (Lowery and Custer 1990), and a pestle at the Higgins Site (Ebright 1992).

Regarding trends in lithic raw material use along the Western Shore of the Chesapeake Bay, results from the Indian Creek V Site indicate that a change in lithic material preferences is associated with the change from notched to bifurcated points. Roughly 75 percent of the Palmer and Kirk notched points (projected age 7800-6000 B.C.) from the site are manufactured from nonlocal rhyolite and chert, while the succeeding bifurcated types (projected age 7000-5300 B.C.) are made of both local and nonlocal materials in roughly equal proportions (LeeDecker and Koldehoff 1991).

Middle Archaic (6000-4000 B.C.)

The archeological record for the Middle Archaic period is poorly understood for much of the Mid-Atlantic region (LeeDecker et al. 1988). Based on an understanding of this period in adjacent regions, we can assume that Native American population densities continued to rise due to the increased availability of food resources. A shift occurred toward more logistically organized subsistence/settlement patterns. In the American Midwest, evidence suggests that Middle Archaic populations were stationary, at least on a seasonal basis (Brown and Vierra 1983).

In the Coastal Plain, an increased use of local quartz cobbles that began during the previous period continues (Wanser 1982). The processing of plant foods also grew in importance. Three types of sites characterize settlement patterning during this period: macro-band base camps, micro-band base camps, and special function or procurement sites. Large macro-band base camps are situated in the

most productive areas. Seasonal base camps are found in interior swamps, such as Mattawoman and Zekiah Swamps Barse 1985). Smaller micro-band base camps are found in less productive areas of the interior uplands. Procurement sites occur in association with specific resources, and represent the extraction and processing of these resources.

This system of general foraging, stressing the exploitation of seasonally available faunal and floral resources, follows Caldwell's (1958) model of "Primary Forest Efficiency." Gardner (1980) has examined the period in detail and has suggested the term "Primary Closed Forest Efficiency" to describe the Middle Archaic period. Diagnostic projectile points for the Chesapeake Western Shore include Morrow Mountain, Stanly, Guilford, and Neville forms (Wesler et al. 1981; Dent 1995).

Late Archaic (4000-1000 B. C.)

During the Late Archaic period, continued growth in population, and a greater shift to logistically-oriented subsistence/settlement patterns occurred, with sites established in an increased variety of environmental settings. Formation of the Chesapeake Bay from the rising sea level led to the availability and spread of many additional resources, including shellfish, anadromous fish, and migratory waterfowl (Dent 1995). The increased importance of riverine and estuarine resources is noted by the presence of fishing implements in the artifact collection and by an increase in riverine and estuarine sites. The appearance of more diverse artifact forms also marks the Late Archaic. In other areas of eastern North America, the Late Archaic period yields the first evidence of fiber-tempered pottery (Skibo, Schiffer, and Reid 1989; Reid 1984), burial mounds (Charles and Buikstra 1983), and the use of domesticated plants (Ford 1985; Smith 1987).

Change toward a more logistical settlement pattern is paralleled by an increase in the number and types of sites (Custer 1988; Custer 1983). Custer (1983) suggests that large base camp sites are found on well-drained land near large drainages or wetlands, while small procurement and extraction stations are found in upland areas. Dent (1995:184) cautions, however, that many of the large Late Archaic sites in the region characterized as macroband sites may represent "palimpsests reflecting reoccupations over substantial periods of time." In the upper Piscataway drainage, short-term Late Archaic campsites are noted along small upland streams (Stewart and Gardner 1978; Wesler et al. 1981). Important recently investigated Late Archaic components on Maryland's Western Shore include the Higgins site (Ebright 1992) and the Indian Creek V site (LeeDecker and Koldehoff 1991).

Late Archaic projectile point forms include both notched varieties (Brewerton, Vernon/Halifax, Clagett), narrow-blade stemmed forms (Bare Island, Lackawaxen, Holmes), and broad-blade Savannah River points (Wanser 1982; LeeDecker and Koldehoff 1991; Dent 1995). Piscataway points, with contracting stem bases, are tentatively assigned by Dent (1995:180) to the Late Archaic, although this assessment is not universally accepted, with other researchers variously attributing these points to the Terminal Archaic or the Woodland. Custer (1984) suggests that broad blade projectile points found in the region may also represent knives.

Nondiagnostic flaked stone artifacts at Late Archaic sites are dominated by unfinished bifaces and bifacial tools, expedient flake scrapers, drills, perforators, and utilized flakes. Often, drills and endscrapers are manufactured from broken or exhausted projectile points (Dent 1995:182). Additionally, the variety of groundstone implements in Late Archaic artifact assemblages increases, consisting of adzes, celts, gouges, and axes. The range and number of woodworking tools found at Late Archaic sites suggest the possibility of a substantial dugout canoe industry (Dent 1995:203). The appearance of steatite vessels characterizes the latter part of the Late Archaic. As exchange networks increase in complexity during the Late Archaic, the importance of artifacts of rhyolite, argillite and steatite increased (Kent et al. 1971; Custer 1988; Stewart 1987; Dent 1995:202).

Early Woodland (1000 B.C.-200 A.D.)

The Woodland period is better known in the Mid-Atlantic area than the preceding cultural periods. The major diagnostic traits traditionally cited for the Woodland period include the introduction and use of fired clay ceramics and an increased reliance on horticulture. Although the subsistence base was primarily composed of resources collected by the traditional patterns of hunting and gathering which

persisted from the Archaic period, horticulture gradually assumed greater importance. This led to a subtle change in settlement patterns toward a more sedentary lifeway.

As with much of the Northeast and Ohio Valley, Early Woodland settlement patterns are not well known along the Western Shore of the Chesapeake (Dent 1995:229-231), due in part to the paucity of investigated single-component habitation sites. McLearen (1991) has excavated Early Woodland domestic structures at the US Route 522 Bridge Site near Front Royal, Virginia, in the Shenandoah Valley, revealing a repetitive pattern of oval structures measuring circa 8 meters in length with associated hearth and/or storage features, that Klein (2003: 213) interprets as evidence of "low population size and/or and an impermanent occupation."

Ceramics generally function as cultural markers during the Woodland period. The characteristic Early Woodland period pottery is tempered with coarse grit and is thick-walled; steatite-tempered Marcey Creek wares are characteristic of the early part of this period, as are Selden Island ceramics. Accokeek Creek ceramics, cord-marked and tempered with sand and quartz, appear after the Marcey Creek ceramics and are followed by Pope's Creek Net-impressed wares (Stephenson and Ferguson 1963; Egloff and Potter 1982).

Fishtail and corner-notched projectile points may have been associated with these early ceramic types in the southern Maryland region (Wesler et al. 1981). Later Early Woodland projectile point types include Calvert and Rossville stemmed points (Stephenson and Ferguson 1963; Richie 1971). Nondiagnostic stone tool assemblages include expedient drills, perforators, scrapers, and utilized flakes. Lithic raw material use emphasizes local sources, especially cobble quartz (Dent 1995:228-229). At sites where preservation warrants, bone and antler tools such as antler flaking tines may also be present (e.g. Waselkov 1982:226).

Middle Woodland (A.D. 200-900)

The Middle Woodland period demonstrates a continuation of developments associated with the Late Archaic and Early Woodland periods. The seasonal hunting and gathering pattern continued, but with a greater emphasis on fishing. Seasonally-abundant anadromous fish were exploited below the Fall Line throughout the Late Archaic to Late Woodland periods.

The Middle Woodland is characterized by an elaboration in burial ceremonialism, widespread interregional exchange, and the increased importance of indigenous cultigens. Settlement patterns are similar to those described for the Early Woodland. Settlements focused on the most predictable resources and the areas with highest productivity. Semi-sedentary, very large base camps, characterized by shell middens, are situated in the floodplains of major drainages. These sites may include midden accumulations with subterranean storage pits later recycled as trash receptacles, hearth features, roasting pits and fire-cracked rock features (Dent 1995:240).

The diagnostic ceramic type of this period is Mockley Ware (Stephenson and Ferguson 1963). These ceramics are thick, shell-tempered wares that exhibit surface finishes of net-marking or cord-marking. Associated projectile point forms include Fox Creek, Selby Bay, and Jack's Reef types (Wesler et al. 1981). At many sites, nonlocal raw materials such as rhyolite were used for the manufacture of lanceolate Selby Bay-Fox Creek projectile points. Often these bifaces arrived at sites from sources to the west as preforms and were then reduced to finished form (Dent 1995: 237-238). Stewart (1989:60) comments on these data as evidence for Middle Woodland exchange networks between interior and coastal Middle Atlantic groups, although the Dent (1995:238) suggests that some of this may have involved direct procurement.

Late Woodland (A.D. 900-1600)

Social organization became more complex during the Late Woodland, and led to the emergence of tribal societies. There is evidence of large, circular, fortified multi-seasonal villages in floodplain settings, such as the Accokeek Creek and Potomac Creek sites (Stevenson et al. 1963; Blanton et al. 1999). From a settlement pattern standpoint, large sedentary villages may have been supported by smaller outlying hamlet sites (Dent 1995: 250).

The presence of palisaded villages suggests that intergroup relations were characterized by hostilities as well as alliances. Treatment of the dead changes, with ossuary burials identified during the Late Woodland. Two well-known ossuary sites (Moyaone and Mockley Point) are located on the Potomac River, west of the study area (Curry 1999).

During the Late Woodland, wild food resources remained a major part of the diet (LeeDecker et al. 1988). Faunal remains at the Accokeek Creek site, for example, are dominated by deer but also include elk, bear, turkey, squirrel, the duck, bobcat, raccoon, rabbit, skunk, and wolf. Aquatic resources in the site included freshwater clams, gar and sturgeon (Stevenson et al. 1963). Archeological evidence for a shift to agriculture in the Chesapeake region does exist, but is not abundant. Squash and beans have been recovered at the Reynolds-Alvis Site along the Chickahominy River in Virginia. Maize has been found at the White Oak Point Site and the Great Neck Site in Virginia (Waselkov 1982; Turner 1992). The limited evidence for agriculture raises questions as to its total contribution to the subsistence base.

Diagnostic ceramics of the Late Woodland include shell-tempered Townsend ceramics, quartz-tempered Potomac Creek and sand-tempered Moyaone wares (Stephenson and Ferguson 1963; Egloff and Potter 1982; Dent 1995 245-246). Projectile points consist exclusively of triangular varieties, which appear to decrease in size through time, and are believed to represent the introduction of bow-and-arrow technology (Wesler et al. 1981). Associated material culture includes a diverse inventory of scrapers, perforators, choppers, hoes, and net weights along with groundstone implements such as axes, celts, adzes, mortars, pestles, manos, metates and abraders. Antler and bone was fashioned into a variety of tools as well as decorative items, and shell was used to manufacture scrapers, pendants, and beads (Dent 1995: 247-248).

Euroamerican History

Contact and Settlement Period (1570 to 1750)

Although other European explorers reported on their cruises along the margins of the region, particularly the southern reaches of the Chesapeake Bay and North Carolina's Albemarle Sound (which partially appears in John White's 1590 map), sustained exploration and deliberate mapping of the Chesapeake Bay began with Captain John Smith's voyages throughout the bay in 1608. As he mapped the bay, Smith documented his encounters with members of local Algonquin and Iroquoian groups and incorporated their knowledge of other groups in the region into his maps and reports. For instance, Smith recorded numerous tribes, such as the Susquehannocks, Massawomecks, Tuckwoghs, and Anacostians, and noted their mutual hostility (Barbour 1986: 148-150, 166, 231-232). In the lower Potomac River area, he noted members of the Conoy chiefdom and their villages. Smith also identified numerous native villages belonging to the Patuxent tribes along the Patuxent River drainage west of the project area: Patuxent, Wascocup, Quomacac, and Opanient (Figure 3-1). The Patuxents maintained a loose affiliation with the Piscataways, who stood as the predominant member of the Conoy chiefdom (Feest 1978: 240-242).

As the seventeenth century progressed, contact with Europeans resulted in trade, conflicts, alliances, dramatic cultural change, and ultimately dislocation for local native groups. For instance, some members of the Conoy chiefdom participated in Opechancanough's 1622 uprising against the English settlers in Virginia. Later, pressure from Susquehannocks, who ranged south from the upper Susquehanna River area in Pennsylvania to the head of the Chesapeake Bay, influenced the socio-economic dynamics of life for the Piscataway chiefdom. Susquehannock incursions into the lower Potomac and Patuxent Rivers region induced the Piscataways into alliances with Maryland's English settlers in the early seventeenth century. As another measure of defense against Susquehannock raids, Piscataways constructed a palisaded fort in Zekiah Swamp, north of the study area, within current Charles County (Hobbs 1961: 76-77).

Figure 3-1

Selection from Virginia, Discovered and Described by Captayn John Smith, 1608. Geography and Map Division, Library of Congress

Stated briefly, the relations between European colonists, the native Algonquins, and Susquehannocks formed a significant aspect in the region's early history. The arrival of approximately 150 colonists, including Father Andrew White and Leonard Calvert, at Saint Clement's Island on the north shore of the Potomac River to negotiate with the Conoy chiefdom for a settlement marked the establishment of the Maryland colony in 1634. Acting on behalf of his brother Cecilius Calvert, Second Lord Baltimore, who had inherited the province from his father George Calvert, the first Lord Baltimore, Leonard Calvert served as governor of the colony until 1643. With permission and agreement from the Conoy Chiefdom, the colonists occupied an abandoned Yaocomoco village at Yeocomico and planted crops in fields previously cleared by its former inhabitants. They named the capital of the colony St. Mary's City. St. Mary's, Maryland's first county, was established in 1637 (Figure 3-2).

As a proprietary colony, Maryland followed the designs of its private founders rather than the corporate policies of a joint stock company such as the Virginia Company or the dictates of the Crown over a royal colony. The Calvert family intended to import and maintain a social order based on an idealized English class hierarchy. Established as a refuge for disenfranchised English and Irish Roman Catholics, they also mandated religious freedom in their colony. Their advocacy for freedom of religious worship was based on their experiences of persecution and legal disabilities as Roman Catholics in Great Britain and their desire for drawing immigrants to the colony. Calvert's manorial system of land disposal mirrored the headright system of Virginia, but it also endowed the manor lords with special rights, judicial duties, privileges, and status. Opportunities for profit in tobacco, the introduction of chattel slavery, the immigration of yeoman families from England and Virginia, and religious factionalism undermined the Calverts' designs by the end of the seventeenth century (Wesler et al. 1981: 153). Instead of a hierarchical society with Calverts at the pinnacle, middling planters emerged as the prevailing economic and social agents.

Figure 3-2

Selection from John Ogilby's Nova Terra-Mariae Tabula, 1635. Maryland State Archives, W.T. Snyder Map Collection

Maryland's Fur Trade

The fur trade illustrates the significance of relations between colonists and natives during this historic period. European economic activities in the project area immediately followed the realization of profit in the fur trade and tobacco cultivation. Initially, inter-ethnic alliances among regional tribes, elite colonial entrepreneurs, and London merchants developed the trade in beaver furs, which temporarily deferred the expansion of agricultural pursuits and conflicts for control of arable land in the region. For instance, north of the project area, William Claiborne, with a royal trading license, engaged in the fur trade with Susquehannocks, Tuckwoghs, and other neighboring Algonquin groups at Kent Island from 1631 to 1637. Henry Fleet engaged in a similar trade in the upper Potomac River area with Anacostias. Word in England of Claiborne's success over the course of three years in the trade encouraged Sir George Calvert, the first Baron of Baltimore, and his investors to pursue a royal proprietary charter and profits in the fur trade. Calvert 's charter, claiming authority over lands between Delaware Bay and the Potomac River, was approved by Charles I in 1632, precipitating a conflict with Claiborne's trade, New Sweden (and later the Dutch at New Amstel), and the interests of other Virginia colonists.

When Calvert's colonists arrived in 1634, Claiborne's Virginia supporters and Susquehannock allies provided a hostile reception. After the Calverts, with their Piscataway allies, expelled Claiborne from his Kent Island and Palmer's Island trading posts in 1638, relations deteriorated further (Fausz 1988: 62-74). Demonstrating their enmity for Maryland and the Piscataways, the Susquehannocks (Figure 3-3) diverted their furs and pelts to the Swedish Fort Christina on the Delaware Bay beginning in 1638 (Fausz 1988: 73).

Figure 3-3

A Susquehannock, Selection from Virginia, Discovered and Described by Captayn John Smith, 1608. Geography and Map Division, Library of Congress

Complex relations between the Maryland colonists and the Susquehannocks persisted through the last quarter of the seventeenth century. Competition with the Swedish colony for furs and pelts from the Susquehannocks, which surpassed the quality of furs and deer skins produced by the Piscataways, led to violence in the 1640s. Following a raid on settlements along the lower Patuxent River in 1642, Gov. Leonard Calvert designated the Susquehannocks, Wicomese, and Nanticoke tribes, which had been armed by Swedish traders, as "enemies of this Province" and ordered local authorities to prepare for an expedition against them. In 1643, after suffering further Susquehannock raids, the Maryland governor fortified Palmer's Island with a garrison and engaged the Susquehannock warriors in battle that year. The campaign produced limited results. In 1644, Maryland commissioned Henry Fleet as their representative in peace negotiations with the Susquehannocks and ordered him to return with captives and artillery the Susquehannocks had captured in the engagement (*Archives of Maryland*, Vol. 3: 116-117, 128, 131-134, 146-150, 276-279).

In the 1650s, the misfortunes of the Susquehannocks against their League Iroquois enemies benefited the Maryland colony and yielded a period of regional stability. Due to disease and losses in battles with the Mohawk in particular, Susquehannock hegemony in the Chesapeake region declined. In 1650, the Susquehannocks negotiated a peace treaty with the colonists of Virginia, Maryland, and New Sweden and ceded some territory along the northern Chesapeake shores (Fausz 1988: 83; *Archives of Maryland*, Vol. 3: 277-278). Nevertheless, the decline of the Susquehannocks continued even as they succeeded in some battles with their enemies. As the League Iroquois broke up the Huron confederacy in a quest for western fur hunting territory during the Beaver Wars, Susquehannocks, engaged in their own attacks against League Iroquois, sought a broader alliance with Maryland to counter the growing strength of their League rivals. In 1652, in exchange for arms and support, Susquehannocks granted more of their territory to Maryland (Jennings 1978: 365). Although Susquehannock warriors were successful against the League enemies, in the 1660s, disease and trading opportunities influenced their decision to accept Maryland's offer of a reservation and to relocate to an abandoned Piscataway village at the confluence of Piscataway Creek and the Potomac River.

The Susquehannock relocation to Piscataway Creek proved unfortunate. League Iroquois raids in the Virginia backcountry between 1675 and 1676 were blamed on Susquehannocks, and colonial militia reprisals forced them into flight from Maryland. Specifically, a combined force of Virginia and Maryland militia attacked the Susquehannock's Piscataway Creek stronghold in present-day Prince George's County, marking the end of their alliance with Maryland in 1675. Survivors of the attack fled to the Virginia backcountry in the vicinity of Ocaneechi Island in the Roanoke River where they endured further assaults during Bacon's Rebellion. Remnants of the group lived among Lenni Lenape at Shackamaxon on the Delaware River or in New York among League Iroquois (Fausz 1988: 88-89; Kent 1984: 45-50; Jennings 1978: 366; Jennings 1984: 133-141; Morton 1960: 1: 227-234).

Although they had secured peaceful relations with Maryland as a tributary group, the Conoy chiefdom diminished during the second half of the seventeenth century. By 1650, the Patuxents had moved off of the lands they had occupied at the time of Capt. Smith's exploration of the bay. They relocated to a Choptico reservation on the Potomac River. Encroachment on their territory by English settlers, destruction of their crops by English cattle, and dissatisfaction with colonial authority's plans for their consolidation on reservations with other groups of the Conoy chiefdom led to a migration of Piscataways, Chopticos, Yaocomacos, and Patuxents up the Potomac River to Harrison Island in 1697. By 1704, they had moved farther up the Potomac River to Conoy Island. By 1750, they had left the Potomac River drainage for Iroquoian territory in the upper Susquehanna River Valley of Pennsylvania and lived under tributary status to the League Iroquois (Feest 1978: 246).

Tobacco Culture

By the end of the seventeenth century, tobacco cultivation surpassed the fur trade as the driving force of Chesapeake society and economy. Tobacco culture began to shape the English colony's demographics, social hierarchy, and settlement patterns on the landscape from its inception. Initially, British Americans settled primarily along the shoreline areas of the bay and the Potomac and Patuxent Rivers, the major transportation arteries in the area. Settlers placed their domestic and agricultural complexes on necks of land along the shorelines of the rivers, creeks, and bays—rather than in the

interior. The transportation and merchandise needs of tobacco planters were met by ships and waterways rather than roads.

With little demand for central market places, town development proceeded slowly. In 1654, the colonial council formed Patuxent County, later renamed Calvert County. By 1660 there were 6,000 settlers in Calvert County.

Herman's 1673 map (Figure 3-4) illustrates the seventeenth-century riparian settlement patterns of the colony. The map identifies numerous plantations situated on necks of land close by navigable waterways. It also notes the location of settlement clusters such as Calverton and Warrington, both in Calvert County. Also, Herman identified the native settlements in Charles County at the Piscataway village. English settlers utilized areas that offered potable water and good tobacco soil (not poorly drained tracts) which also were proximal to navigable waterways.

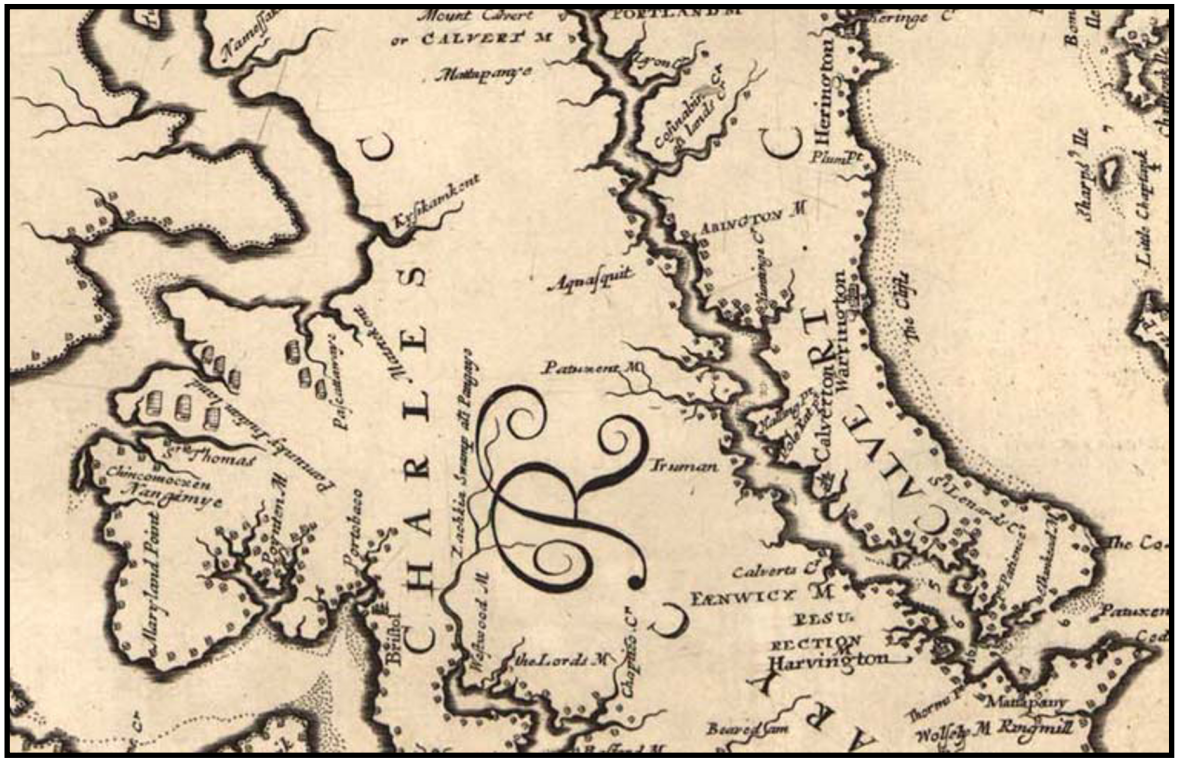


Figure 3-4

A Selection from Augustine Herman's Virginia and Maryland, 1671 [1673]. Library of Congress, MSA SC 5339-1-172. The project area is located in Calvert County.

Agricultural development in Maryland proceeded slowly. Various factors affected the tobacco economy. Morbidity and mortality characterized life in seventeenth-century Maryland. Labor shortages occurred due to the short life spans of indentured servants. The colony relied on immigration for population growth. The increase of a creolized population was constrained by the colony's disproportionate sex ratio. Men outnumbered women. Without opportunities for marriage, stable family development was retarded. The population featured numerous orphans and step-children. If indentured servants survived the term of their indenture, manor lords could not expect all of them to continue farming as their tenant. Changes in the Calvert's land disposal policy, brought about by Ingle's Rebellion (see below), allowed individuals to acquire small plats of land. Small planters, who could afford to hire freemen and transport

servants into the colony, developed into the dominant group in Maryland's seventeenth-century colonial society (Menard 1977; Carr et al. 1988; Tate and Ammerman 1979; Main 1982).

The Development of Democracy

Ingle's Rebellion of 1645 illustrates the political, social, and economic tensions at work in Lord Baltimore's colony. Claiming that the Calverts failed to fulfill the mandates of their charter (for instance, maintaining the Protestant religion) and that they had seized goods, ships, and property of Protestants (particularly his), Captain Richard Ingle gained the support of disgruntled Protestant colonists. Emboldened by letters of marque from Parliament, he commanded a raid on St. Mary's City and the hundreds in the vicinity. Following the uprising, the population of colony fell to about 100 people, Gov. Leonard Calvert and his supporters fled to Virginia, and Ingle usurped the government until the middle of 1646, when Gov. Calvert regained control.

The rebellion marked a period of government reorganization. In response to the unrest, the Calverts abandoned the manorial plan for Maryland government. They appointed William Stone, a Protestant, as governor in 1647. Seeking to encourage immigration, they adopted generous terms of land disposal. They allowed the immigration of radical Protestant settlers from Virginia. Fortunately, these changes coincided with a boom in the tobacco market, and a period of growth returned to the colony. Servants and family groups of free yeomen arrived with aspirations of tobacco profits. Thereafter, a society of middling planters, rather than a society of lords and squires, took root.

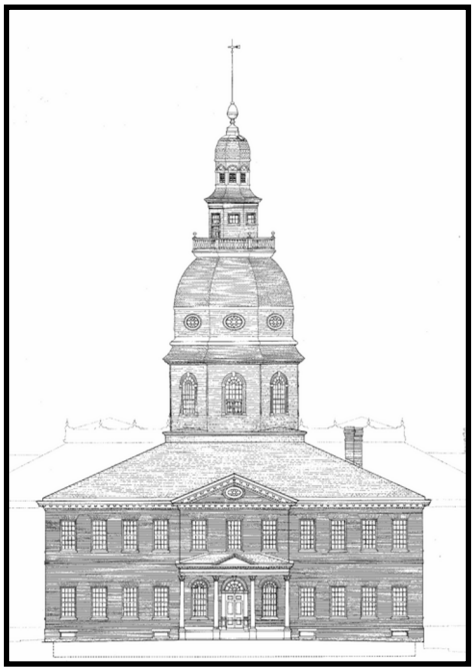
Political stability did not follow along with the growing demographic and economic stability. Another rebellion in 1654, spawned by the wars in England between King and Parliament, kept the Calvert proprietors, and their Protestant governor, out of government until 1657. During this period, the Puritan commissioners who usurped proprietary power met and kept their provincial court records at Richard Preston's house in the vicinity of Sollers Wharf. Forces loyal to Lord Baltimore attacked Preston's house in 1655 (Papenfuse et al, 1984: 242). Upon their return, the Calverts reasserted their dominance by installing family members in the highest ranking, and most lucrative, colonial offices. Confined to the lower ranks of power in the assembly and county offices, Protestants, whose numbers increased through direct immigration from Great Britain, remained opposed to Calvert leadership.

Their final submission to Calvert authority was brief. Another coup, led by John Coode against forces loyal to Lord Baltimore under William Digges, began in 1689, and its success was aided by events in England. During a phase of centralizing colonial governments and revolution in Great Britain, the monarchs King William and Queen Mary, having recently accepted Parliament's invitation of sovereignty, declared Maryland a royal colony and took over Maryland government in a bloodless revolution in 1689. Royal control of Maryland meant the establishment of state religion, the Church of England, and the installation of a Royal Governor, who arrived in 1692. The local jurisdictions established by the Calvert proprietors were re-designated by the royal governor as parishes.

The end of the seventeenth century marked the decline of Southern Maryland's prominence in affairs of the colony. The new royal administration moved the seat of government from St. Mary's City to Anne Arundel Town in 1694, which was renamed Annapolis. The new royal governor, Francis Nicholson, designed an axial plan for the colony's capitol city. In 1695, Charles and Calvert Counties lost territory when Prince George's County was created. According to the council orders, Charlestown was designated the county seat, remaining so until 1721 (Papenfuse et al, 1984: 251). Baltimore and Annapolis emerged as the leading urban and commercial nodes of the colony, rather than the wharves and port towns of southern Maryland (Figure 3-5).

Figure 3-5

Maryland State House, Southeast Elevation, HABS Survey MD-245, National Park Service, Dietmar Opitz, Alan Halvorzen, and Andrew Wenchel, Maryland State House Project 1986, Library of Congress.



Rural Agrarian Intensification and Agricultural-Industrial Transition (1750 to 1870)

Social stratification, political revolution, population growth, western migration, shifting industries, and transportation improvements are the important themes in the region's history during this phase. Changes in the labor system, agriculture, commerce, and demography appeared as the population increased. By converting to the Church of England and petitioning Parliament, the Calvert family regained their proprietary control of the colony at the beginning of the century. In 1715, Benedict Leonard Calvert became the Fourth Lord Baltimore and appointed his brother Charles as governor. Settlements in Maryland moved from the shoreline of the bay and the rivers to the piedmont, as migrants from Pennsylvania arrived. The expansion of towns, roads, canals, and commerce changed the character of life in Maryland, more so in the upper Chesapeake Bay and upper Potomac River. Inland towns developed more slowly because the goods and services they could provide were not required by self-sufficient plantations.

Tobacco and Slaves

Due to the limits of indentures as a reliable supply of field labor and a long-term tobacco market depression at the turn of the century, Maryland planters turned to slavery as their primary labor base. When the flow of white immigrant servants from Great Britain declined due to improved economic conditions and a deceleration in the birth rate there, slave traders began importing Africans and slaves from the West Indies into Maryland.

In contrast to the freedom earned by servants at the expiration of their indenture, Africans and their offspring remained in slavery for life. Although the transformation of the Chesapeake region's labor force from servant to slave had begun in the 1660s, this change manifested itself as significant aspect in the agrarian intensification of southern Maryland by the 1750s (Kulikoff 1986: 37-42).

Tobacco's labor-intensive cycle included planting and weeding beds of seedlings, transplanting seedlings to fields and mounding soil around them, constant weeding and removal of pests, harvesting, stemming, curing, and prizing the leaves into hogsheads (Figure 3-6). Planters then shipped their product to wharves along the Potomac and Patuxent Rivers and across the Atlantic Ocean to merchants and dealers in England.

Figure 3-6

Selection from William Tatham, An Historical and Practical Essay on the Culture and Commerce of Tobacco, London, 1800, NW0029, Special Collections Department, University of Virginia Library, Charlottesville.

The Planter's Prospect

This period of agrarian intensification also witnessed a change in the character of domestic architecture in the Chesapeake. Changes in the type of crops grown on some Chesapeake plantations induced a change in the type of housing built by upper class, prosperous planters. Relative to architectural resources, the domestic and agricultural complex of tobacco plantations from the historic period featured a main dwelling house, slave quarters, and various dependencies such as: a kitchen, a dairy, a poultry house, and other agricultural storage buildings. Two tobacco-related structures dating from this time period (Preston's Cliffs tobacco barns CT-59A and CT-59B) were encountered in the survey area.

When they were able to diversify their crops and engage in mixed farming, particularly switching from tobacco to growing cereal grains, wealthier planters moved away from impermanent architecture—with earthfast foundations, hole-set posts, and clapboarded framing. Rather than repair these expedient buildings, which had suited the needs of their early circumstances, they replaced them with buildings on brick foundations or built entirely in masonry. Research shows this transformation occurring earlier in areas where planters shifted to grains than in the southern Maryland region, which is delineated by the navigable length of the Potomac River and the Chesapeake Bay's western shore. By clinging to tobacco cultivation until the 1800s, architectural renewal was late in developing on plantations in the project study area. Once diversification occurred, however, rebuilding progressed steadily (Carson et al.1988: 134-148).

While Baltimore, Frederick, and Georgetown burgeoned as market towns, modest growth of central places occurred in the project vicinity. For instance, St. Leonard Town was established as river port with a tobacco inspection station in 1706 on St. Leonard Creek in Calvert County. Benedict, Charles County, was established for a similar purpose as a tobacco inspection station and shipping point. These examples illustrate a hamlet settlement pattern rather than a pattern of fully integrated towns. Prince Frederick, however, was established in 1772 to serve as Calvert County's court house when St. Leonard Town was no longer convenient (Dando and Rabenhorst 1969).

For the remainder of this period, southern Maryland's Western Shore witnessed the further development of tobacco farms, the entrenchment of a slave-based labor system, and economic diversification in the form of maritime commerce (Brugger 1988: 20-39). Other eighteenth-century developments in southern Maryland's history were related to the tobacco cultivation and transportation. Ferries, wharves, tobacco inspection houses appeared on the landscape in the vicinity of the project area. Population gradually increased.

The Tobacco Inspection Act of 1747 engendered the need for the public tobacco warehouses found at locations such as St. Leonard Town, Upper Marlboro, and Port Tobacco. A system of inland roadways began to emerge through the efforts of the local courts.

Salient events during the Union's struggle for independence from Great Britain occurred in the vicinity of the survey area (Papenfuse et al, 1984). Although Maryland did not witness significant military action during the Revolution, some Maryland merchants established non-importation policies against British goods, and Maryland militiamen distinguished themselves at various battles during the revolution. At various times during the Revolution, Baltimore and Annapolis served as the capitol for the Continental Congress. Farms within the project area also suffered from the depredations of British marine raiding parties. Annapolis briefly served as the capitol when the Continental Congress fled Philadelphia following the British occupation and militia riots there.

During the Union's second war for independence (the War of 1812), British forces raided plantations and wharves along the Potomac and Patuxent Rivers. In response, U.S. Commander Joshua Barney (Figure 3-7), who had served in the French navy, directed naval actions in the Patuxent River against the British fleet, which blockaded the Chesapeake Bay in March 1813 and raided from Norfolk up to Havre de Grace. From a temporary base on St. Leonard Creek in Calvert County, Barney commanded a fleet of hastily constructed, lightly armed, shallow draft, barges and gunboats. The Chesapeake Flotilla challenged the British fleet in June 1814 in the bay, at Cedar Point, and twice at the mouth of Saint Leonard Creek, where they retreated. Barney scuttled two gunboats in Saint Leonard Creek, northwest of the study area.

Figure 3-7

Commodore Joshua Barney, c. 1830 engraving by Cephas G. Childs and Thomas Gimbrede *for A Biographical Memoir of the Late Commodore Joshua Barney*, by Mary Barney.

On August 19, 1814, British marines landed at Benedict, Charles County (northwest of the project vicinity), and marched inland on their assault against the capitol at Washington, D.C. Two days later, Barney ordered that the flotilla be scuttled in the Patuxent River near Pig Point. The British then occupied Upper Marlboro before the Battle of Bladensburg, where Barney and his forces engaged the enemy on land. Although the battle at Bladensburg was a bust for the Americans and the Capitol was destroyed, the American victory at Baltimore revived American spirits.

The introduction of steamboat service enhanced the tobacco economy of the region in the nineteenth century. The Weems Line provided access to markets in Alexandria, Virginia, and Baltimore in 1815. The Weems Line established a terminal at Benedict, Charles County, along the Patuxent River. Tobacco culture continued to prevail as the major component of the local economy, especially with the construction of numerous steamboat landings. Yet, ship-building contributed to the local economy of southern Calvert County, which earned a regional reputation for its skipjacks and bugeyes (Brown 1976, 37-40).

Civil War

As a border state, Maryland's role in the sectional conflict that developed into the Civil War is intriguing. Dedication to a slave-labor system of tobacco cultivation resulted in strong local sympathies for secession and the Southern cause in southern Maryland, while citizens from other regions of the state supported the Union. Some residents of Maryland joined regiments in the Confederate army. Nevertheless, Maryland remained in the Union, and no significant military engagements occurred within

the survey area. However, the area did achieve prominence immediately following the surrender at Appomattox Court House.

After shooting President Lincoln at Ford's Theatre in the District of Columbia, John Wilkes Booth and his co-conspirators fled to southern Maryland. Hoping to escape south into Virginia, the assassins planned to cross the Potomac River in boats piloted by southern sympathizers. Furthermore, Dr. Mudd set Booth's broken leg at his farmhouse in adjacent Charles County. Lastly, Booth and his partisans secreted themselves in Zekiah Swamp before making their river crossing into Virginia, where they were captured and Booth was killed (Klapthor 1958: 123-143).

Industrial\Urban Dominance (1870 to 1930)

Emancipation resulted in the loss of southern Maryland's enslaved labor supply. To replace the former tractable labor force, tenant farming and farming on shares emerged in place of slavery as the region's economic base. Tobacco, despite its soil-depleting characteristics, and other grains remained as cash crops. In the 1870s, Waldorf, in neighboring Charles County, emerged as a tobacco trading and shipping node, and it remained a significant tobacco auction center into the late twentieth century (Papenfuse et al, 1984: 253). Later in the nineteenth century, industrialization manifested itself in the region through the establishment of seafood processing and vegetable canning facilities. Tourism and recreation also contributed to the regional economy at locations such as Marshall Hall and Solomon's Island.

In the late nineteenth century, efforts to connect the southern portion of Calvert County to Baltimore via a railroad failed. In 1868, the Baltimore & Drum Point Railroad (CT-1295) received its charter. By 1889, the railroad alignment reached Bertha; however, construction ceased in 1891 and the line was never completed. Segments of the railroad occur within the project area and this resource was documented during the project's architectural survey (see Chapter 25). Without rail transportation, this portion of the county remained predominantly rural in character throughout this period.

As a counterpoint to the failed Baltimore & Drum Point Railroad, the effect on community development from successful railroad construction is illustrated by La Plata, Charles County. La Plata was founded in 1873, with the arrival of the Pope's Creek Branch of the Pennsylvania Railroad (PRR). The Pope's Creek Branch line allowed the PRR access to Washington, D.C.'s, freight market. When silting in the creek restricted the size of vessels that could use the wharf at Port Tobacco, and after the courthouse burned to the ground in 1892, La Plata replaced Port Tobacco as the county seat in 1895 (Klapthor 1958: 138).

The regional economy of southern Calvert County also relied on tourism. For instance, the Marburger Family ran a hotel at Point Patience, south of Lusby, in the early decades of the twentieth century. Later owners of the tract rented cottages to Point Patience visitors (Catts et al, 1999: 59).

Modern Period (1930 to Present)

While agriculture continued to prevail as the economic base of southern Maryland during this period, the effects of the Great Depression, mobilization for world war, and industrial growth are important historic themes emanating from this period. The most salient theme, however, is suburbanization for its certain effect on the cultural landscape of southern Maryland. Due to the decline of tobacco, the expansion of federal government and military agencies, residential developments, and commercial strip development, have come to constitute the region's primary growth factor. Transportation improvements, such as the toll bridge at Hallowing Point (erected in the 1930s), and roadway improvements, such as the dual carriage widening of Route 4, illustrate progress and modernization in the project study area. The Baltimore YMCA constructed a summer camp for youths in the county in the 1930s, reflecting the improved access afforded by roadways. Located within the current study area and documented during the project's architectural survey (see Chapter 25), Camp Conoy provided recreational activities for youths from the city.

During World War II, the construction of the U.S. Navy's Patuxent River Air Station (south of the project area) and the Navy's propellant plant at Indian Head (northwest of the project) changed the character of southern Maryland. These facilities brought thousands of workers to the area. The effects of the war

effort came quickly after the introduction of electricity to the region. In 1938, the Southern Electric Cooperative brought affordable electricity to homes in the region (Papenfuse et al, 1984: 286). Soon thereafter, the Navy re-engineered an abandoned railroad, the Washington, Potomac, & Chesapeake Railroad, to serve their facility. The Navy acquired the line, which terminated at Hughesville, and completed it to the U.S. Naval Air Station in Saint Mary's County (Klapthor 1958: 140). During the war, the beaches in the vicinity of Cove Point and Drum Point served as grounds for practicing amphibious landings, and the deep waters off the shoreline were suitable for deep mine testing. The Navy acquired the resort property at Point Patience and transformed it into the United States Naval Mine Warfare Test Station. The station featured warehouses, quarters for men, and docks (Catts et al, 1999: 59; Papenfuse et al, 1984: 243).

Since the conclusion of World War II, southern Maryland has seen further residential and commercial development, due to expansion of federal facilities and energy-related industries, as well as the growth of tourism and suburban sprawl from Washington, D.C. The Indian Head Naval Reservation and Patuxent Naval Air Station have experienced continued growth. Following the war, Titanium Ore Corporation constructed an ilmenite extraction facility in the vicinity of Cove Point Lighthouse, south of the project area (Mountford 2002: 6). This plant was demolished when Columbia Gas Company acquired the property in 1970. Construction of the Liquefied Natural Gas Terminal near Cove Point was completed in 1974. Located within and immediately adjacent to the current study area, the existing Calvert Cliffs Nuclear Power Plant, Maryland's only nuclear power facility, was constructed in the 1970's and began operation in 1975.

Conclusion

When viewed as a historical landscape, the terrain of southern Maryland offers a field of contrasts in the Chesapeake region. While Maryland witnessed and endured similar categories of historical forces at work in Virginia, Pennsylvania, and Delaware, the manner of colonialism, federalism, and industrialism in southern Maryland is distinctive. For instance, social and economic relations with native groups started out on a footing quite different from that in Virginia. Maryland's treatment of the Conoy Chiefdom and the Susquehannocks contrasts with Virginia's relations with the Powhatan Confederacy. Maryland's struggle with denominational tolerance and inclusion provides historical contours not found in Tidewater and Piedmont Virginia or Pennsylvania. Agricultural colonization through tobacco plantations followed a different pace in Maryland, lagging a few years behind Virginia. The development of railroads, as an indication of industrialism, in southern Maryland contrasts with the efforts of the Baltimore & Ohio Railroad in the northern and western part of the state. The relocation of the seat of governmental power shaped the development of southern Maryland. From its loss of prominence to Annapolis in the late-seventeenth century to its current role as a bedroom community and recreational venue for residents of the federal District of Columbia following World War II, historical forces continue to shape this landscape and its architectural resources.