CHAPTER THREE – AFFECTED ENVIRONMENT

Introduction

A discussion of the planning area's resources provides a context for the evaluation of proposed uses and alternatives. The information for this chapter was gathered from a variety of sources, and has been cited in the text as appropriate. For additional resource information, refer to the source documents cited in the text or the appendices as appropriate.

Land Ownership

The planning area covers over fifty square miles (32,000 acres), and most of the land is privately owned and not affected by the plan. The State of Maryland owns approximately 14,000 acres, comprised of 15 park, forest and wildlife management area units, including the nearby Doncaster State Forest and Purse State Park. (See Table 1 Recreation on page 3-14 for a listing of these units). The State also owns 715 acres of the former PEPCO property and 509 acres of recently acquired Wilson Farm. The BLM holds title to 548 acres at Douglas Point and 24 acres at the former Maryland Point Naval Observatory. Douglas Point is the only property managed cooperatively by the state and federal government as a wildlife management area.

Local Zoning

The county's Land Use Concept Plan has designated the Nanjemoy Peninsula as an Agricultural Conservation District. The purpose of this district is to preserve the agricultural industry, prevent scattered uncontrolled development, and retain the area's rural character.

The county has projected Nanjemoy be a slow growth area due to two factors: it is relatively remote from the designated growth areas such as Waldorf and La Plata, and it is not a targeted growth area. The small Nanjemoy community itself, located on MD Route 6, is a designated Village Center. Village Centers are designated to "preserve and enhance their present characters to serve their traditional roles in county life" (Charles County Comprehensive Plan, 1997 Revised)

Table 1. Federal and State Owned Lands within Planning Area

Federal and State Owned Tracts At Douglas Point	
Maryland DNR	
Tracts 1 & 2 (Ben Doane)	143.70 acres
Parcel B	294.886 acres
Parcel D	159.748 acres
Parcel E	116.855 acres
Total	715.189
BLM	
Parcel A	548 acres
Total	548 acres
Excluding Rights-of-Way	
Maryland DNR	
Tract 1A	Perpetual right of ingress and egress along and across Tract 1A, existing gravel road.
Tract 2	Perpetual right of ingress and egress over, through and across the adjoining property of the Grantee, using existing, future or prior agreed to roadways to access the Grantor's adjacent property.
BLM	
Parcel A	Existing leases for meteorological tower with County Commissioners of Charles County and the State of Maryland for the use of the Maryland Institute For Emergency Medical Services Systems. The leases contain approximately four acres, surrounding the tower and with access by existing dirt road off State Highway 224.
Other Federal and State Properties in Planning Area	
BLM	
Maryland Point Naval Observatory	24.3 acres (ROW: 60 foot access and utility right-of-way from State Highway 224 into Parcel 1 (3.7 acres)).
Maryland DNR	
Wilson Farm	509acres
Purse State Park	149 acres

Geophysical Resources

Climate

Climate can influence the types of proposed activities and facilities that are under consideration. Southern Maryland enjoys warm, humid summers and cool winters. High and low average temperatures vary between 81°F and 25°F. Precipitation averages 40 inches per year. Occasional extra-tropical storms also affect the area (Charles County 1980). Prevailing wind directions vary by season. Winter winds generally come from the north to northwest and summer winds prevail from the south to southwest. The frost-free season lasts about 180 days.

Air Quality

The selected alternative must not, by state and Federal law, cause significant increases in emissions that contribute to the existing poor air quality conditions in areas that currently do not meet federal and state air quality standards.

Maryland's air quality complies with all National Ambient Air Quality Standards except the one-hour ozone standard. Charles County and four other counties in Maryland are included in the regional Washington, D.C.-Maryland-Virginia "serious ozone non-attainment area". Although Charles County is included in this designated non-compliant area, Charles County and in particular the Nanjemoy area, have better air quality than the rest of the Washington Metro area.

Geology

The geology of an area may influence the types of uses and development to be considered. The planning area lies in the Atlantic Coastal Plain, a physiographic province located in the Western Shore Uplands Region. Elevations rise from sea level to about 300 feet in a series of terraced surfaces (J.P. Reger and E.T. Cleaves, Maryland Geological Survey, written commun., 1998). Frequently, the first terrace is visible in the form of 30 to 60 foot bluffs rising from the water and adjacent low areas along the Potomac River shoreline. The land is formed from sediments consisting of unconsolidated sands, gravels, silts, and clays deposited over basement metamorphic rock similar to that found in the Piedmont Province to the west. In southwestern Charles County, the Coastal Plain sediments range from about 600 to 1,000 feet in depth. These Coastal Plain sediments dip gently and thicken in an east-southeastward direction.

Four formations comprise the majority of notable geology on the public lands portions of the planning area. These formations are: the Chicamuxen Church Formation, Holocene Deposits (Undivided), the Aquia Formation, and the Maryland Point Formation. Further description of these formations and their relationship with the publicly-owned parcels is presented in Appendix 12. Erosion of the cliffs along the Potomac and the tributary stream valleys is actively occurring. Frequent slumping of the unconsolidated materials can be observed.

Below these formations and above the bedrock is the Patuxent Group comprised of the Patuxent - Arundel Formations (undifferentiated) and the Patapsco Formations. These layers are comprised of sands and clay layers from which much of the well water for the area is drawn.

Mineral Resources

Sand and gravel are found in the planning area. These resources are used as aggregate by the construction industry, and sand and gravel quarries are common in western Charles County. Most of these quarries, however, occur further north and east of the planning area. Exploitable sand and gravel deposits are potentially present in the Chicamuxen Church Formation, and less so from the Maryland Point Formation. Historically, there have been some sand and gravel quarries and borrow pits in these units. There is no evidence of economic deposits of other minerals, or fossil fuels in this part of southwestern Charles County.

Topography

The planning area's topography is one of the most significant factors that influence the location of proposed activities and development.

Wilson Farm

The focal point of this property is an inlet, feeding Mallows Bay and the Potomac River. The inlet is partially surrounded by wetlands. Elsewhere, 10- to 30-foot bluffs comprise most of the shoreline. Northeast of the Mallows Bay drainage area, steep ravines carry two streams flowing east to west under MD Route 224. The southern section of the property consists of level land previously used for agriculture, and some drainage areas. A beaver pond lies on the southern boundary line. East of MD Route 224, the property has a general slope eastward and has similar ravine relief.

There is a section of the Wilson Farm property that is located on the east side of Jacksontown Road, near but isolated from the parcel described above. This parcel is wooded and flat and gently sloping toward the west.

Douglas Point

Douglas Point is divided from north to south by MD Route 224 which travels along the property's drainage divide. Over half of the property is located between the shoreline and the west edge of the road. This side of the property is comprised to two relatively level terraces that run parallel to the shoreline. The lower terrace slopes towards the Potomac River to bluffs rising 20 to 30-feet above the river. These bluffs are typical of approximately 80 percent of the Douglas Point shoreline, and they are eroding at a moderate to high rate due to exposure to waves. Other areas along the shoreline are relatively level and low-lying where the bluffs are absent. This allows for limited access to the water with exception of an existing trail leading to the river. Two major drainage ravines and one smaller one are distinct in the lower terrace, and they flow into wetlands connected to the Potomac.

In contrast, to the east of MD Route 224 is level terrain previously used for agricultural uses. Slopes on this tract are nominal. One basin in the southern portion of the tracts drains into the Nanjemoy watershed.

Purse State Park

MD Route 224 bisects this property from north to south. The western portion is fairly level, only sloping gently towards the shoreline. The shoreline is lined with steep bluffs 10 to 20 feet high except where wetlands form at the end of streams. An existing roadway leads to a very steep descent to the narrow beach. Steep slopes surrounding the main drainage area, which leads to the Potomac River, provide the most significant relief. To the east of MD Route 224, the topography is fairly level, except where intermittent stream valleys create localized steep relief.

Maryland Point Naval Observatory

The site has mostly flat or level open fields. The exception is the shoreline which has vertical bluffs along the shoreline of the Potomac River that are over 30 feet high.

Remainder of Planning Area

The southern portion is mostly level with one major drainage area into the Potomac River just north of Thomas Point.

Soils

The soils present on the Douglas Point, Wilson Farm, Purse State Park, and Naval Observatory tracts and the remainder of the planning area do not vary greatly by soil association or type. See) Soil types are basically sand, silt or clay and combinations thereof. The soil type affects

drainage, vegetation, and stability. Problem soils usually are wet or highly erodible. Soil type can affect the location of trails, trail maintenance, and building and road sites.

The Exum series soils are one of the main types of soils found in the planning area. These soils are moderately well drained and only moderately sloping. They are silt deposits with some sand and clay. They tend to be deep and support native vegetation such as mixed hardwoods and pines. These soils do not tend to pose much limitation regarding development or use.

Keyport Silt Loam is a common soil that is also found in the planning area. This silty soil tends to be found near rivers where they are relatively level. There are often poor drainage issues associated with them. Further description of the soils located on the publicly-owned parcels is presented in Appendix 6.

Map 9 is based on both slope analysis (topography) and the severity of certain erodible soil types. The map has three criteria: "Slight Constraints" – areas on the property with slight limitations occur on gentle slopes with minimal to moderate soil erosion problems. These soils rarely if ever became saturated for long periods and have the lowest potential to cause adverse environmental impacts through use or site improvements. "Moderate Constraints" – occurs on grades ranging from 5-15 percent and has the potential to create environmental impacts, particularly if the problem is not rectified through proper design and engineering. "Severe Constraints" – occurs on slopes in excess of 15 percent with soils that have moderate to severe erodibility, or they are situated on perennially or permanently saturated soils. Improvements and uses in these areas are severely limited, though not always infeasible.

Water Resources

Aquifers

Aquifers are saturated water-bearing rocks or sediments that can be tapped by wells to provide water. Aquifers provide ground water for human consumption, as well as for livestock, agricultural, commercial and industrial purposes.

There are two types of aquifers in the planning area: water-table aquifers and deeper confined aquifers. Water-table aquifers occur near the surface of the land. The water-table aquifers in southern Maryland, found in the geologic formations mentioned previously, is generally not used for water-supply purposes, although historically, it has been used for small domestic and livestock supply.

The second type are confined aquifers that occur at depth between have clay layers which limit the water's flow up or down. They are also known as "pressure" or "artesian" aquifers. Confined aquifers within the Potomac Group are the primary sources of ground-water supply in southwestern Charles County. Yields of wells screened in sands of the Potomac Group in Charles County range from less than 100 gpm (gallons per minute) to more than 500 gpm. While these formations are found in the planning area, any assessment of the productivity of these aquifers at specific properties within the planning area would require data from site-specific test wells.

The basement rocks (metamorphic rocks) that underlie the Potomac Group sediments in southwestern Charles County do not produce water in useable quantities and are not potential aquifers.

Groundwater Resources

An old well or wells are likely to exist on the Wilson Farm property from former land uses, but their existence, location and condition are not known at this time.

Monitoring Wells

Four groundwater-monitoring wells are located west of MD Route 224 on the BLM-owned portion of the Douglas Point tract. These wells were drilled by PEPCO in 1974 and 1975 to locate deep-water aquifers on-site. These wells represent three major confined aquifers encountered at the site. Nine additional wells or pipes were identified on the Douglas Point property during the on-site inspection.

No other information is available about the Maryland Point septic tank's function and general condition, other than its 500-gallon capacity.

No wells are known to exist on the Purse State Park property.

No water quality information is available about the drinking water well at Maryland Point.

Surface Water

The primary drainage areas throughout the planning area are the Potomac River watershed draining westward and the Nanjemoy watershed draining eastward. The individual streams located on each parcel are described under the parcel headings throughout the geophysical resource summaries above..

Water Quality

Chemical analyses conducted on water from wells in the lower and upper Patuxent aquifers indicate that the water from both aquifers is a sodium bicarbonate type of good quality. All reporting levels for dissolved constituents are within the recommended limits set by the U S. Environmental Protection Agency (USEPA).

Biological Resources – Plants

Vegetation

Vegetation within the planning area reflects the region's unique location between the northern limit of several southern species and southern limit of northern species (Charles County 1980). Most of the landscape, however, has been altered by human activity. Nevertheless, climate, soil and other environmental conditions have created six major vegetative communities, include the upland communities of mixed hardwood, pine forest, open fields, and the wetlands communities: forested wetlands, palustrine scrub/shrub wetlands, and freshwater wetlands (Map 7). Although some forest stands may contain trees over 100 years in age (MD DNR 2002), the stands are all secondary growth (Charles County 1980). Past agricultural practices in the area were a primary cause of land clearing (Charles County 1980).

Appendix 7 lists the common and scientific names for species common to each of these plant communities.

The planning area contains remarkably large blocks of relatively unbroken forest that extends eastward into the watershed of Nanjemoy Creek. In addition to providing habitat for rare species, this extensive forest cover: 1) provides habitat for even the most wide-ranging and area-sensitive wildlife, and 2) provides ecosystem integrity and habitat stability even in the face of disturbance, such as fire, tornados, etc. The Nature Conservancy and the Natural Heritage Program recognize this block of forest as one of just thirteen sites on the Coastal Plain of Maryland that is large enough to meet these two criteria. It is more than twice the size of the other sites identified in southern Maryland. The most mature sections of forest show little evidence of encroachment by invasive species or other signs of artificial disturbance. Forest stands of similar age and quality are rare in southern Maryland. While these other stands are generally palustrine scrub/shrub wetlands, on the Douglas Point tract they are also present as upland communities which is unusual considering the agricultural history of the area. While further data collection would be necessary to characterize and rank the forest communities on site, it is clear that high quality communities are present.

Upland Communities

Except in those areas that have been cleared or previously disturbed by natural or human forces, the area is dominated by mixed hardwood forests, a forest type that is indicative of western Charles County and the soils that are present.

Wetland Communities

Wetlands are areas where water is the primary factor controlling the environment and associated plant and animal life. These areas are transitional communities between aquatic and upland communities, with a water table at or near the surface of the land. Plants that are capable of growing in water or very wet soils usually dominate wetlands. Soil characteristics of wetlands are different from those of dry, upland sites.

Wetlands play a crucial role in enhancing water quality, providing a water supply, and serving as a natural means of flood and erosion control. Wetlands are also among the most productive and important biotic communities, as they serve as essential breeding areas, and display a great diversity of plant and animal life. Many species of wildlife spend all or certain seasons of the year in wetland habitats for breeding, brood rearing, and feeding or protective cover. Some fish species use wetlands for egg laying, feeding, and protection. Wetlands function as sanctuaries for rare, threatened and endangered species.

Map 12 shows the distribution of wetlands throughout the planning area and shows the distribution of wetlands throughout the Douglas Point tract. Appendix 7 contains a more detailed description of the wetlands associated with the Douglas Point properties and the planning area.

Forestry

A forest management plan (FMP) for the PEPCO tract, which covered two parcels totaling 1386.1 acres, was prepared by the Maryland Forest Service in 1986. The FMP determined that the Douglas Point property has merchantable timber on the property. It divided the property into individual management units, called stands, which are delineated based on vegetative composition, structural diversity and environmental factors. (A summary of the forest stand study at Douglas Point is located in Appendix 7.)

Invasive Plant Species

Invasive plants are those that have become established in habitats where they have no natural biological control of their reproduction and spread. Invasive plants have the ability to rapidly invade new areas and out-compete the indigenous (native) vegetation for light, water and nutrients. Invasive plants can be nonnative plants that have been introduced from another country, or they can be native plants that are foreign to a particular ecosystem.

A thorough inventory of invasive species within the planning area and smaller, constituent properties has not been conducted. During general reconnaissance of the properties, several invasive species were noted and are discussed in Appendix 7.

It is BLM policy to undertake integrated noxious weed management activities and implement programs including those which:

- Promote and facilitate cooperation and coordination among various agencies and private organizations and individuals;
- Protect, enhance and wisely use terrestrial and aquatic ecosystems;
- Provide land and aquatic resource inventories compatible among agencies to identify and classify noxious weed infestations.

It is a BLM and DNR management priority to prevent the establishment and spread of new weed infestations.

Appendix 7 lists the common and scientific names of invasive plants known to occur within Douglas Point, Purse State Park and Wilson Farm properties.

Biological Environment - Animals

Wildlife

There is a close relationship between the types, diversity and numbers of wildlife populating an area and the quality, diversity and size of the available habitat. An understanding of this relationship is important when considering and evaluating new activities and land uses and the effect they may have on the native species. Some species are sensitive to specific changes, while others are extremely tolerant and adaptive. If some native species are becoming scarce due to loss of habitat, locally or regionally within their range, then they may be protected by federal, state or local regulations.

The Douglas Point region is rich with mast producing trees and fruit producing understory vegetation. As a result, the western Charles County tracts also play host to many game and non-game mammal species, including but not exclusively, masked shrew, foxes, otters, opossum, moles, bats, skunk, mink, raccoon, and white-tailed deer. Coyotes and bobcats are also believed to sparsely inhabit the area.

The area is also home to a multitude of perching birds such as blue jays, robins, sparrows and blue birds, and a variety of ducks as well as Canada geese. Wading Birds also are common including the great blue heron and green heron. Gallinaceous birds such as mourning dove and wild turkey can be also found, along with a healthy population of raptors such as barred owls, osprey, and bald eagles. The large unbroken forest also provides habitat for Forest Interior Dwelling Bird Species (FIDS).

In 1980, the Douglas Point tract contained a reported 24 reptile and 18 amphibian species. Currently, one can readily find several species of frogs, toads, turtles, salamanders, lizards, and snakes. The Nature Conservancy has identified the Douglas Point region as one of the most the biologically diverse areas in the state of Maryland and is worthy of conservation.

Fisheries

The important recreational and commercial fisheries resources adjacent to the combined properties, referred to as the "Douglas Point Properties," are mainly confined to the Potomac River mainstem. Some of the species include Striped bass (Morone saxatilis), White perch (Morone americana), Channel catfish (Ictalurus punctatus), Largemouth bass (Micropterus salmoides), and Blue crab (Callinectes sapidus).

Management authority for the mainstem tidal Potomac River below the District of Columbia for most species belongs to the Potomac River Fisheries Commission (PRFC). They are charged with collecting commercial landings and other similar data. Tributaries and some reaches of the nearshore area are under Maryland DNR jurisdiction. Information on annual harvest can be obtained through the PRFC office at Colonial Beach, Virginia or through Maryland DNR Fisheries Service. Although management authority falls under PRFC, they have no field staff for performing population or environmental assessments. Therefore, the following two projects have been performed by DNR Fisheries Service and pertain to this area.

Tidal Black Bass Project

Largemouth and smallmouth black bass are annually monitored for relative abundance, condition (relative weight), length at age and other parameters. Previous surveys have indicated a healthy population of largemouth bass and occasional smallmouth. Condition and growth are better than most inland waters. Reproduction is adequate though not as high as levels in Maryland impoundments. Tidal river black bass are heavily dependant on submerged aquatic vegetation (SAV). Stable and abundant nearshore grass beds attract and provide much of habitat for bass in this area.

Juvenile Finfish Survey (young-of-year bass survey)

The juvenile finfish survey was initially established to estimate annual striped bass reproduction of the various spawning populations around the bay. The data have since proven useful in tracking adult or juvenile abundance of many estuarine finfish. Two stations, seined annually, are adjacent to the planning area. Other data collected and available include bottom types, percent coverage of SAV in the sample area, water temperature, salinity, and sample depth.

Other aquatic resource data are available through the Maryland DNR Watershed Assessment Division. The Maryland Biological Stream Survey prepares comprehensive surveys of small stream habitat and biota including electrofishing and benthic sampling. While no streams within the boundaries have been sampled, data are available for similar sites in the region.

Chesapeake Bay Critical Area

For purposes of protecting the Chesapeake Bay and regional waterways, shorelines, and related habitats, Maryland law requires stringent review and approval of land use changes on properties located within the Critical Area. The Critical Area is defined as all land and waters within 1000-feet of the mean high water line of tidal waters, wetlands, and tributary stream. See Map 12 for a

general depiction of the Critical Area. In addition, all land within 100-feet from the mean high water line of tidal waters; tributary streams and tidal wetlands that are within the Critical Area represent the Critical Area Buffer. The buffer also varies to encompass steep slopes greater than 15 percent, adjacent wetlands, highly erodible soils, and sensitive habitats.

A significant portion of the planning area is located within the Critical Area. All proposed development, uses, and activities, must comply with the Critical Area Regulations, including removal of vegetation. Additional information about the Critical Area and the Douglas Point properties is located in Appendix 11.

Special Status Species

The special status species (also known as rare, threatened and endangered species) are listed by the U.S. and Wildlife Service and the State of Maryland

One federally and state-listed species is known to inhabit the planning area (bald eagle), another may occur in freshwater tidal wetlands (sensitive joint-vetch), and one species occurs adjacent to the planning area (dwarf wedge mussel). The planning area includes habitat for numerous species that are rare, threatened or endangered in Maryland. Appendix 13 lists some of the species that are currently and historically known to reside in the vicinity of the planning area (within approximately one mile) and the preferred habitat of each species.

A number of Species of Concern have been documented recently or historically in the vicinity. These include the shortnose sturgeon (Acipenser brevirostrum) listed as “Endangered” and Atlantic sturgeon (Acipenser oxyrhynchus) listed as rare. (See also Appendix 13).

Cultural and Historic Resources

The cultural and historical influences on the land over time provide a context for understanding the region, its resources, and its inhabitants. This section provides a historical and cultural overview for the planning area. Specific focus is centered on the Douglas Point tract, and the surrounding area and the BLM-owned Maryland Point Naval Observatory tract. (For a more detailed historical overview, analysis and recommendations for cultural resources management refer to Appendix 4.)

Many cultures and people have called the Nanjemoy Peninsula home over the millennia. Artifacts have been found that indicate the presence of some of the oldest cultures in what is now the Mid-Atlantic region of the United States. Archaeologists have found traces of cultures dating from 12,000 years before present (B.P.) to the Woodland Native American period. The area also supported populations of Native Americans at the time of first contact with Europeans in the early 17th century. After European settlement, many of the indigenous people were displaced. The region has also figured in colonial history, the American Revolution, and the Civil War.

Prehistoric Period

Paleo-Indians were the earliest people to inhabit the region, from 12,000 B.P. to around 8,500 B.P. The Mid-Atlantic region contained the Eastern Woodlands, in which early human occupants began to establish a distinct cultural identity. Several well-known Paleo-Indian sites discovered in northern Virginia and along the Delaware River (Gardner 1974 and McNett 1985) have helped place these local peoples within the overall cultural and temporal context of the Mid-Atlantic States. These sites, and others (collectively) seem to suggest that Paleo-Indian peoples practiced

a "seasonal round" of subsistence and non-subsistence related activities – which reinforced the highly mobile, nomadic, lifestyle.

The Archaic Period extends from 8500 to 3000 B.P. Within the western shore of Maryland, some researchers contend that increasing water levels of the local rivers have inundated many of the Late Paleo/Early Archaic archaeological sites situated along the current waterways, thus skewing the sample of recorded sites to only those located on upland landforms (Campbell and Davis 1998).

The Woodland Period dates from circa 3000 B.P. until the time of European contact in the Mid-Atlantic States (circa A.D. 1600). In the Chesapeake region, Woodland Period settlements reflect a gradual shift towards dispersal of small groups during part of the year and subsequent "fusion" of these groups into larger populations during other parts of the year. Another seasonal shift would disperse these large groups into smaller groups throughout the region. These groups moved between both settlement systems based on the availability of resources.

Late Woodland Period occupants throughout the region shifted towards an economy based primarily around large-scale (stable) agriculture - as the primary source of food and fiber. Throughout the Eastern Woodlands, and Mid-Atlantic States in particular, Late Woodland sites tend to be larger settlements (i.e., villages), which are typically located in agriculturally productive floodplains.

Contact and Early Historic Period

By the early 17th century, there was consistent, direct contact between Europeans and indigenous Native Americans located within the Chesapeake Bay region. Subsequent trading and contact occurred throughout the early 1600's between the English, the Conoy and other Algonquian groups situated along the Lower Potomac River – including the Piscataway, Patawomeke and others located within the Virginia and Maryland border. During the 1630's, the English granted large tracts of land along the Potomac River to European settlers, which effectively pushed Native Americans out of the area. According to Freest (1978), only a few hundred Conoy remained in southern Maryland by 1700.

Historic Period

The Wicomico River, Port Tobacco River, and Chicamuxen and Mattawoman creeks all saw substantial settlement throughout the 17th and 18th centuries. Tobacco became the major economic focus within in Charles County in the 18th and 19th centuries. Slave labor was fully involved in the increase of tobacco production and export from the county throughout the early- to mid-1800's. During the Civil War, the Union Army moved into Charles County. Large-scale military establishments were placed along the Potomac River in Charles County under the charge of Union General Joseph Hooker. Hooker's installations had their headquarters around Stump Neck and Rum Point, with extensive operations around Liverpool Point, Mallows Bay, and Douglas Point.

Throughout the 20th Century, Charles County continued to struggle with an impoverished economy and stagnant population. Following World War II, the county became more of a recreational and suburban retreat for residents in the metropolitan. Today, Charles County is primarily a suburban community to these cities. While a small percentage of residents maintain an existence based on agriculture (transitioning from tobacco to other crops), the majority of the local population depends upon the goods and services of the larger metro areas.

Wilson Farm – Mallows Bay

The inlet at Wilson Farm, known as Mallows Bay, has the distinction of being the largest wooden ship graveyard in the Western Hemisphere (Shomette, 1996). The burned-out remains of at least 88 wooden steamships and a plethora of other vessels sit in the bottom sediments in the cove. Most of these ships were constructed during a U.S. World War I effort to quickly construct many cargo and troop transports to minimize the impact of German submarine attacks on supply routes. Faulty design and changing technology rendered them obsolete. Various failed corporate salvage operations brought the ships to Mallows Bay where they played a role in the local economy by providing jobs and materials for local scrap collectors.

In the 1960's during the congressional hearings regarding possible removal of the ships, several groups provided testimony suggesting that the ship hulls, having been there for almost 40 years, had become an integral part of the Mallows Bay ecosystem and the local fishery. For various reasons they were never removed, and the ships remain today. Many of the sunken ships have trapped sediments and collected plant life to become artificial islands. In addition to the wooden ships, other ship remains have been found, including 12 barges, several 19th Century log canoes and schooners, various workboats, a car ferry called the Accomac, and possibly a Revolutionary War longboat (ibid.)

Maryland Point

The twenty-three acre tract recently transferred to the BLM in early 2002 from the United States Navy, known as the "Maryland Point Naval Field Station," has not been formally surveyed for archaeological resources. In the 1930's, R.G. Slattery conducted surface collections from the vicinity of Maryland Point, though the nature and disposition of these collections are unknown. The cultural resource files obtained through consultation with the Maryland Historical Trust indicate that an historic landing site at the Potomac River is present within the vicinity of the Maryland Point tract, though the exact location and details of this site are unknown (MHT file: no date). No other cultural resources are noted within the tract.

A low intensity archaeological survey has been conducted in the nearby vicinity of the Maryland Point tract (Thompson 1979). This survey identified several prehistoric sites along the Potomac River shoreline east of Maryland Point suggesting a high likelihood of significant prehistoric sites within the Maryland Point tract. The presence or absence of these cultural resources can only be confirmed by an archaeological survey within the tract. The other site locations along the river, however, suggest that the Maryland Point tract may also be rich in cultural resource sites and features.

Paleontology

Maryland has a variety of interesting fossil locations ranging from the very recent shark teeth of the shores of the Potomac and Chesapeake Bay areas to very old, Paleozoic fossils of trilobites and brachiopods in western Maryland. In the Douglas Point area, only mollusks and sharks teeth have been found to date. These fossils date from late Paleocene era (65 m.y.a to 58 m.y.a). (See Appendix 2 for a description of the Federal paleontology program.)

The geologic formations exposed on the bed and shores of the Potomac and its tributaries in the planning area are very recent estuarine and river deposits. Within these sands, gravels and muds (depending on the environment of deposition) are the varied results of erosion from the entire Chesapeake Bay drainage area. It is possible to find virtually any kind of fossil from almost any period here, from ancient brachiopods to dinosaurs, and recent sharks. Material weathering out of the nearby cliffs is also deposited here. The scientific value of any remains (vertebrate, invertebrate, or plant) found in these recent deposits is minimal since they could have been transported any distance from their source.

Of much greater scientific interest are the Paleocene, Eocene and Miocene deposits which make up the cliffs and uplands of this area. These formations are nearshore deposits of the early Atlantic Ocean. They contain fossils of fish, sharks, rays, crocodiles and turtles. Fossil shells of gastropods and mollusks are also relatively common. When these fossils are exposed on the cliff faces, they are gradually eroded and transported down slope to the river deposits. If they are discovered before extensive erosion has occurred, rather complete specimens of these animals have been excavated. Properly excavated, these represent important scientific specimens. Since erosion of the cliff faces is an ongoing process, it can be expected that occasionally significant exposures will occur, even without human intervention. It can also be expected that the materials will erode and mix with the other detritus on the shore and then be transported away from its origin by the river or the tides.

Visual Resources

A Visual Resource Management (VRM) inventory is required for federal land or federal actions that may affect non-federal properties. At this time, only the Douglas Point and Maryland Point tracts have been inventoried to designate VRM classifications. (See Appendix 8 for a description of the VRM classes.)

Douglas Point is a largely forested, undeveloped tract of land with some brushed jeep and foot trails scattered throughout the property. Based on the objectives outlined, the area will be designated VRM Class II.

Until recently, the Maryland Point tract was owned by the U.S. Navy and managed as a satellite tracking and communications site. Most of the property has been cleared of vegetation and contains massive satellite tracking dishes that dominate the viewshed. Because of these structures, the area will be designated VRM class IV. After the dishes and other structures are removed this designation will be revisited.

Recreation

With regard to the future management of the Douglas Point tract, Purse State Park and the Wilson Farm, it is important to put into a regional context the existing types of public lands and outdoor recreational and nature tourism opportunities that are in Charles County and the Nanjemoy area. This is to ensure that the recommendations in the CMP enhance and strengthen the surrounding network of public lands.

Table 2. DNR public land units in Charles County

Name	Designation	Acreage
Cedarville	SF[1]	2,449
Chapel Point	SP	828
Chapmans	UND	2,225
Chicamuxen	WMA	382
Doncaster Demonstration	SF	1,516
Hughsville Pond	FMA	3
Indian Creek	NRMA	580
Manning Hatchery	FMA	257
Mattawoman	NEA	2,474
Myrtle Grove	WMA	1,700
Patuxent River	NRMA	751
Purse	SP	149
Smallwood	SP	629
Welcome	FT	1
Zekiah	NEA	443
TOTAL		14,387

A report published for Charles County recognized nature tourism as a viable part of the local economy of Charles County, and provided recommendations for improving the visitor experience and implementing unifying tourism themes (Charles County 2000). (For additional information on nature tourism and the local economy, refer on page.) The report also identified the "importance of Douglas Point for habitat protection," and it stated that Maxwell Hall, Chapmans, the Mattawoman NEA, Mallows Bay-Douglas Point could be integrated into the Charles County nature tourism complex" by implementing some short-term improvements to those land units.

1

Notes: State Parks (SP), State Forests (SF), Natural Resource Management Areas (NRMA), Natural Environment Areas (NEA), Wildlife Management Areas (WMA), Fish Management Areas (FMA), State Wildlands, Undesignated Land Units (UND)

Special Area Designations

The Potomac Heritage National Scenic Trail, designated by Congress in 1983, currently exists on the Virginia side of the Potomac River, primarily through utilization of 184 miles of the C&O towpath. The balance of the 700-mile trail exists only conceptually on maps except for a few small segments that are in place. The conceptual trail corridor runs from the West Virginia line on the Maryland side, through the District of Columbia, and a long the tidal shorelines of both Maryland and Virginia. During the conceptual site-planning phase of LPRCMP, consideration will be given to allowances for future efforts interested in implementing this trail.

Socio-Economic Resources

Just as it is important to understand the historical relationships between humans and area resources, it is important to understand the current and projected future relationships between humans and available resources.

Located in southern Maryland, Charles County is one of the fastest growing counties in Maryland. The 2000 Census indicates that there are over 120,000 residents in the county compared to 100,000 a decade ago. Approximately 68 percent of the total population is white and 26 percent African American. Divided by election districts, La Plata and Waldorf have had the highest growth rates during the past twenty years. This factor is attributed to continued growth in the metropolitan area, and it is projected that the county will continue to grow at only a slightly slower rate throughout the near future.

The County's median household income is approximately $62,000, one of the highest family income rates in the state – a $20,000 increase compared to 1990. Charles County also has a relatively low poverty rate in the State, which the 2000 Census estimates at 5.5 percent for individuals over 18 years old, and for families, it is 3.7 percent. (The statewide poverty rate average is 8.5 percent.)

The Charles County Land Use Plan recognizes that during the next decade, it will be important to offer incentives and initiatives for small business development and the creation of jobs within the county to diversify the economic base. The 2000 Census substantiates this recommendation: the majority of the workforce in the county is in the managerial, professional and related occupations, with sales and office categories second, and the services industry third. Agriculture, which also includes forestry, fishing, and mining, comprises less than one-percent of the local economy. Charles County also has an average commuter travel time of 39 minutes, which is the second to the highest in the state. This may be attributed to the county's rapid growth, and reiterates the fact that many of the residents are not locally employed.

Located adjacent to the Potomac River, the Nanjemoy Peninsula has not been geographically defined. For the purposes of this discussion, the peninsula is roughly described as follows: from MD Route 224 just south of the US Naval Ordnance facility; proceeding southward along the Potomac River past Douglas Point, Lower Thomas Point and Maryland Point to Riverside; extending northward from the confluence of the Potomac and Nanjemoy Creek; proceeding northward along Nanjemoy Creek to MD Route 6; and then proceeding along MD Route 425 north and terminating in the proximity of Poor House Road.

Nanjemoy continues to be one of the slowest growing and least populated of the ten election districts in the county. Compared to Nanjemoy, the county's growth rate is expected to be 64 percent during the next twenty years, with La Plata and Waldorf being the targeted growth and economic development areas. Nanjemoy's growth rate is expected to be around 20 percent through 2020.

In 1990, the Nanjemoy population was estimated to be about 3,200. One of the census tracts includes most of the peninsula, and the 2000 Census estimates the current population at 3,640 residents. Of the residents who reside in the area, approximately 65 percent are white and 32 percent are African American, which is comparable to the countywide demographic breakdown by race. The Native American population is just over one-percent. There are approximately 1,269 family households in Nanjemoy and 1,400 houses. Approximately five-percent of the housing stock is for seasonal use.

Recreation and the Economy: The Importance of Heritage Tourism

One strategy for economic diversification in the county is through heritage tourism. Heritage tourism involves the assessment of the county's unique cultural and natural resources and investing in planning and marketing strategies to attract visitors to the region. Charles County's interest in furthering recreation and heritage tourism opportunities was captured in a recent study (Charles County 2000). The report evaluated the county's most significant cultural and natural resources, and provided recommendations for planning, marketing and implementation. The study also identified the economic impacts of the tourism and heritage tourism industry. In 1998 over $58 million was spent on tourism in the county and 820 people were employed in the industry. Tax receipts were $2.7 million and local hotel receipts were approximately $450,000. The Office of the Governor also reported that in 1999, Maryland's 47 state parks and six state forests had more than 10 million visitors statewide. The 2000 Year End Maryland Heritage Travel Report also observed that of the total tourism visitation in the State, approximately 27 percent of all trips are heritage tourism related.

More important, the report recognizes that Charles County, and especially the Nanjemoy Peninsula, is in an enviable position to capitalize on the growth and interest in the heritage tourism industry. The county has diverse landscapes consisting of tidal rivers, wetlands, and upland coastal forests; it has one of the most dense populations of nesting Bald Eagles in the lower 48 states; it is only 45 minutes from Washington DC; the Nanjemoy Peninsula borders the Potomac River, a designated Heritage Greenway, as well as Nanjemoy Creek, which is nationally recognized for its outstanding ecological resources; and Douglas Point is well known for its documented Native American archeological sites and its role during the colonial period, War of 1812, and Civil War. The report summarizes these observations by saying that, "simply put Charles County is positioned to offer these millions of visitors an opportunity to experience the natural history that shaped and fashioned the founding of our nation."

In regards to the Lower Potomac River planning process, key recommendations in the Nature Tourism study state that Charles County must have a "plan to maximize the nature-viewing potential of county, state, and federally owned properties . . .. "This includes the string of nearby and complementary protected properties such as: Chapman's Forest, the Mattawoman Natural Environmental Area, Maxwell Hall, Friendship Farm, and Mallows Bay/Douglas Point". In

addition, the study discusses the Lower Potomac River conservation strategy, citing that the outcome of the effort will result in increased public water-access, improved water quality protection, and the addition of newly protected lands for wildlife viewing and interpretation. The report continues by evaluating the heritage tourism opportunities for Purse State Park, Mallows Bay/Douglas Point, and several other key public lands.

Following is a summary of the report's recommendations for Mallows Bay, Friendship Farm and Purse State Park.

Table 3. Nature tourism recommendations (Charles County. 2000)

Mallows Bay/Wilson Farm	Friendship Farm Park	Purse State Park
Kayaking, canoeing Birding/wildlife observation Potential for a visitor interpretive center	Serve as a hub for the county's nature-oriented initiatives Consider a nature and estuarine studies center Water access	Improve parking and install signage Improve/enhance trails Install interpretive signage

Payments in Lieu of Taxes

Payments in Lieu of Taxes (or PILT) are Federal payments to local governments that help offset losses in property taxes due to nontaxable Federal lands within their boundaries. The PILT program is administered by the BLM throughout the nation. In 2002 Charles County received $2,224.00 from the BLM for 973 acres. (BLM 2002, http://www.blm.gov/pilt). See Appendix 9 for a description of how PILT payments are calculated.

Environmental Justice

On February 11, 1994, President Clinton issued Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." This Executive Order is designed to focus the attention of federal agencies on the human health and environmental conditions in minority communities and low-income communities. It requires federal agencies to adopt strategies to address environmental justice concerns within the context of agency operations.

According to 2000 Census data for the census tract that encompasses most of the Nanjemoy area, the socio-economic characteristics for the tract do not vary significantly from those of the whole county. Therefore, any federal actions would fall proportionately on all populations and communities.

Human Health and Safety

The Nanjemoy region does not have a landfill or solid waste transfer site. All solid waste is transported by residents and businesses to an approved landfill, transfer facility, or elsewhere in the county. Although Phase 1 environmental site assessments to determine the presence of toxic and hazardous substances have not been conducted on all of the Douglas Point tracts, no toxic or

hazardous substances are known to exist on the properties based upon available information. Appendix 5 discusses each parcel.

Transportation System

The presence and adequacy of transportation systems in the area must be considered relative to the types or activities and plans for the Douglas Point area.

Several two-lane state and county roads, private lanes and unimproved trails, traverse the planning area. The primary north/south roads are MD Route 224/Riverside Road, located inland but generally parallel to the Potomac River shoreline, and MD Route 6/Port Tobacco Road, which is located east of MD Route 224 and largely comprises the eastern boundary of the northern two thirds of the planning area. MD Routes 224 and 6 are connected by east/west roads, such as MD Route 344/Chicamuxen Road on the northern end of the planning area and Liverpool Road in the middle of the planning area.. In the southern portion of the planning area, MD Route 224 is the only primary route, changing from a north/south direction to an east/west direction in the vicinity of the Maryland Point tract, traversing the middle of the southern planning area and terminating at its connection with MD Route 6.

Traffic volumes are extremely low in the planning area. This may change significantly due to a proposal by Maryland Rock Industries, Inc. to operate a gravel mine adjacent to the Douglas Point Properties that could introduce up to 400 truck round-trips per day on MD Route 224 from the Douglas Point properties northward.

The planning area is not covered by a recreational trail plan, although the Potomac River Water Trail does identify selected sites of interest along the Potomac shoreline at Mallows Bay (Wilson Farm) and Wades Bay (Purse State Park). Public access to state and federal lands is limited to unimproved trails, which do not currently meet universal access requirements. No trails are open to off-road motor vehicle use.