STATE OF MARYLAND
Department of Natural Resources
Capital Programs Administration
Land Planning Services
WILD AND SCENIC RIVERS PROGRAM

Maryland Scenic Rivers:
THE POCOMOKE
Planning for Its Scenic, Wild, and Recreational Resources

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'87

State of Maryland
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Tawes State Office Building
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Acknowledgements

Many people assisted me in the preparation of this report, but special recognition should be given to Mr. & Mrs. Joseph Fehrer of Worcester Environmental Trust. The Fehrers were always available for meetings and trips on the river and they provided valuable technical information.

Special thanks should also be given to Mr. Milton Howell and the Soil Conservation Service River Basin staff at Salisbury, Maryland. They worked long and diligently to accomplish an acceptable, workable plan for the Pocomoke River which would be consistent with the requirements of the Maryland Scenic Rivers Program.

Mr. Chandler Robbins of the U.S. Fish and Wildlife Service should be thanked for taking the time from his busy schedule to provide an up-to-date survey of the birds in the Pocomoke watershed.

Special thanks should also be given to Mr. Harley Speir and Mr. Eric See of the Maryland Department of Natural Resources.

Isedora Ballard

GB 991.M3
P63 1992

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Prepared by: Isedora Ballard
IN COOPERATION WITH THE POCOMOKE RIVER ADVISORY COMMITTEE AND THE SOIL CONSERVATION SERVICE OF THE U.S. DEPARTMENT OF AGRICULTURE

DEPARTMENT OF NATURAL RESOURCES
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Introduction

The Pocomoke River and its tributaries possess unique natural and scenic resources that are unequaled by those of any other river on the Eastern Shore of Maryland. This uniqueness led to the designation of the river and its tributaries as initial components of the Maryland Scenic and Wild Rivers system in 1971. Pursuant to sections 763-765 of Article 66c cumulative supplement (now Natural Resources Code Sections 8-401 et. seg.) the Secretary of Natural Resources is required to formulate and implement a program that will provide for the wise management of the resources on the land and the preservation of the scenic, agricultural, and wild qualities for all State designated scenic and wild rivers.

This plan is intended to promulgate the State's Scenic and Wild Rivers Act for the Pocomoke River. It provides a holistic approach to river management where future development will be carried out in a planned and orderly fashion and all forms of activity and land use will be compatible with the Scenic and Wild River designation. *Plan preparation* includes some integration of county comprehensive plans and coordination, whenever possible, with all affected agencies and organizations. *Plan emphasis* is upon maintaining the river and its immediate enviroment in its existing condition except where there are water quality problems which adversely impact the scenic and recreational appeal of the river, or adverse visual impacts. *Plan implementation* is dependent primarily upon the local governing bodies of the counties through which the river flows.

In section one the river corridor is reviewed as one complete scenic unit, but because of a broad variation in the scenic and wild character of the Pocomoke River area the second section of the plan analyzes the river by segments as well. The Department of Natural Resources realizes that drainage problems exist in the upper Pocomoke basin. It is not the intention of the Scenic and Wild Rivers' Program to preclude such activities which are designed to alleviate these problems but to mitigate, as far as possible, any severe adverse effects that this activity might have, now and in the future, upon the scenic qualities of the river. To accomplish this, a long range plan for drainage and maintenance of the Pocomoke river has been developed by the U.S.Department of Agriculture's Soil Conservation Service (SCS) in cooperation with various agencies of the Maryland Department of Natural Resources and the Scenic Rivers Program. The plan includes recommendations for the management of the scenic resources of the Pocomoke River as part of an overall comprehensive management program.

The recommended plan for the management of the Pocomoke River's scenic resources was derived from three rather broad goals:

- To preserve the outstanding resources of the Pocomoke River in their existing condition;
- To prevent and/or mitigate detrimental influences on the river system; and
- To provide educational and recreational opportunities within the river basin.

Based upon the above goals, the analysis of the resources (Section I of this plan) and resource use (Section II), the Department of Natural Resources and the Pocomoke Scenic River Advisory Board have formulated policies and management strategies for the scenic resources of the Pocomoke River.

☆ U.S. Government Printing Office: 1982—509-494

SECTION I —— Comprehensive Resource Analysis

"When on some gilded cloud or flower
My gazing soul would dwell an hour,
And in those weaker glories spy
Some shadows of eternity..."
Henry Vaughan

Environmental Resources

Scenic and Wild River

Curving softly through relatively flat terrain, past open farmland, cities, small towns and villages, through densely wooded swamps where at low tide grotesque cypress knees peep from murky dark waters and wildlife abounds, then bending and breaking sharply before its entrance into the Sound (a broad expanse of water that empties into the Chesapeake Bay) flows the wild and scenic Pocomoke.

This river, of all the rivers that drain into the Chesapeake Bay, looms large as a unique, mysterious and beautiful waterway. The eerie "dark waters" from which the river gets its name "Pocomoke" (an Indian word meaning *black water*), the stands of bald cypress, and the unique flora and fauna give the Pocomoke a quality unlike any other Maryland river.

Rising in the "Great Cypress Swamp" on the State lines of Maryland and Delaware the mysterious dark waters of the Pocomoke once flowed through an almost impenetrable wilderness where run-away slaves, bootleggers and smugglers once found haven from the law. Now, due to man's encroachment, the swamp occupies only a narrow strip of land along the river and its tributaries. However, parts of this swamp have not been changed significantly, and these areas, mostly along the tidal part of the river, are undoubtedly much like the original forest (Mansueti, 1953). This original forest and the "Great Cypress Swamp" is much like the Dismal Swamp of Virginia in physical characteristics and is the most northern of extensive southern cypress swamps according to Beaven and Oosting (1939). The swamp borders both sides of the river, varying in width from 0.5 miles to nearly two miles wide, and extends five miles into Delaware.

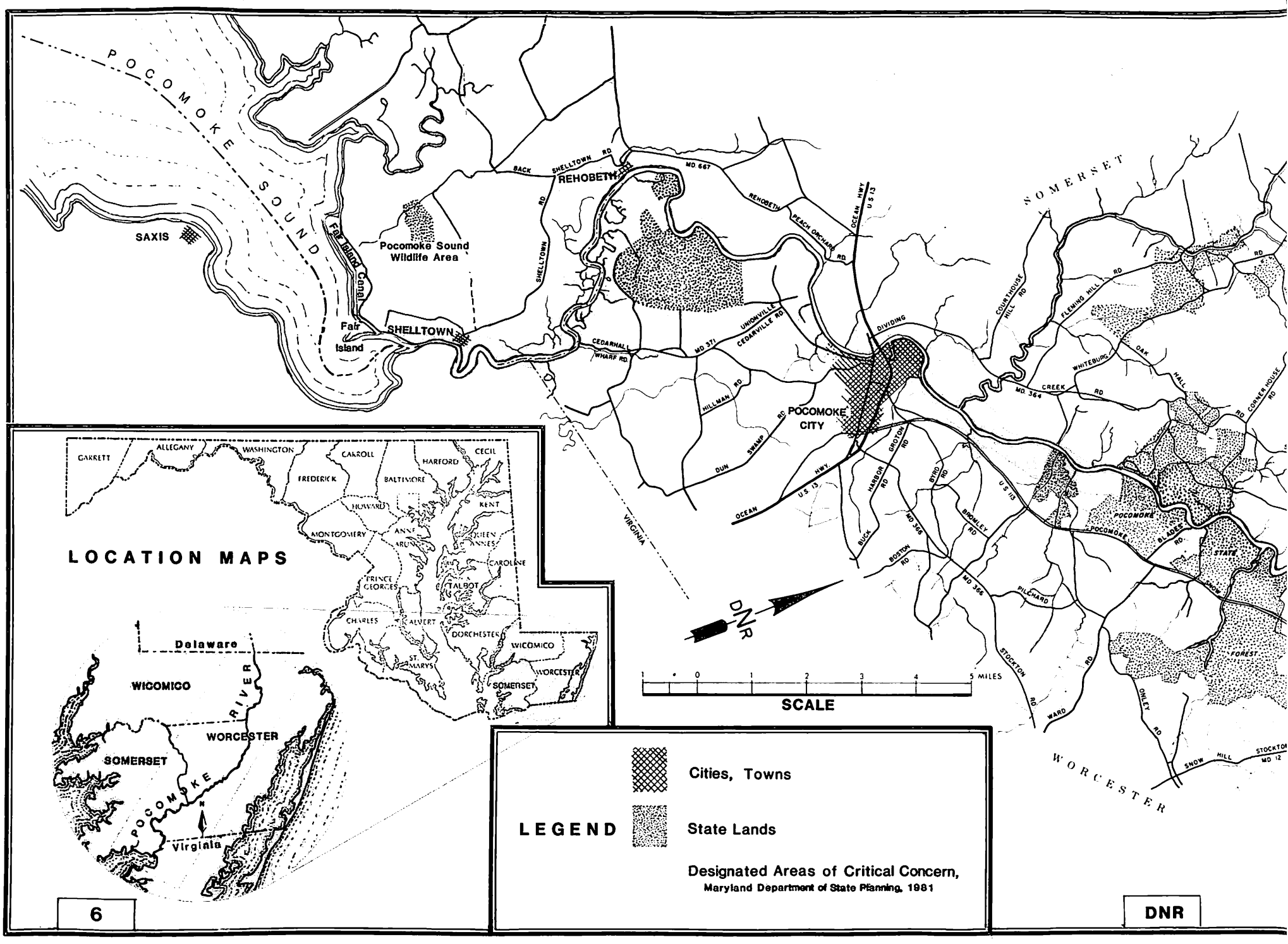
The river watershed is located in the Maryland counties of Worcester, Wicomico and Somerset, the Delaware county of Sussex,and the Virginea county of Accomack. The river flows a distance of about forty-nine miles in Maryland before reaching the Pocomoke Sound. The lower part of the river is brackish and is bordered by a salt marsh that extends several miles upstream to where the swamp begins near Rehobeth. Above Rehobeth, the wooded swamp is continous except where the wide bends in the river bring it to the margin of the flood plain bordered in places by low, pine-wooded bluffs.

The Pocomoke is believed to be the deepest river in the United States for its width. The uniform width below Snow Hill is 400 feet with an average depth of 15 feet and a range of 7 to 29 feet (Mansuetti, 1953). The two longest tributaries are Nassawango Creek (19.6 miles) and Dividing Creek (10.6 miles).

In Maryland the Pocomoke River has been channelized from the Delaware line to approximately one mile below Whiton Crossing. This area is scenic, but channelization is evident. There are, however, several ox-bow cut-offs of the old river meander that are high in natural and scenic value. The scenic character of the river changes at the end of the channel and becomes more wilderness-like in nature. Several swampy islands break up the river below the channel and dense forests along the water's edge leave no earth at all visible at high tide. Cypress knees hover, like small creatures, over the river banks at all but high tides and the forest seems to come alive with wildlife.

Civilization appears upon reaching the town of Snow Hill. Nassawango Creek meanders into the river just below the town. Several houses, Pocomoke River State Forest, which includes the two State Park areas (Shad and Milburn Landing) and Cellar House (historical site) are visible from the river before reaching Pocomoke City. Winding sluggishly in from the north are the black waters of Dividing Creek. Upon reaching Pocomoke City the wilderness is completely shattered and civilization is brought into sharp focus as a bridge, a row of wharves and sheds come into view.

Ten miles on, as the river winds, passing through wooded swamps and fastland, around a "big bend" it comes to the tidy little village of Rehobeth with Cypress Swamp to the south. Below the village the river flows again in wide sweeps through salt marshes and farmland to a low shelf of dry land on which stands the picturesquely neat little hamlet known as Shelltown. The State's biggest and most renowned cypress tree stands in the river at Beverly, an historical site between Rehobeth and Shelltown. From Shelltown, the river flows into the Sound at a left angle and in the pool thus formed lie the infamous "Muds" of the Pocomoke. These muds were caused by centuries of farming under innocent but wateful soil practices, plus thousands of years of natural erosion, where eroded materials were carried downstream and deposited at the mouth of the river. The Sound is a broad expanse of water that stretches westward for fourteen miles before emptying into the Chesapeake Bay.


POCOMOKE SOUND
SAXIS
Fair Island Canal
Fair Island
Pocomoke Sound Wildlife Area
SHELLTOWN
BACK SHELLTOWN RD
REHOBETH
MD 667
REHOBETH
PEACH ORCHARD RD
OCEAN HWY U S 13
SHELLTOWN RD
CEDARHALL WHARF RD
MD 371
UNIONVILLE CEDARVILLE RD
DIVIDING
HILLMAN RD
DUN SWAMP RD
POCOMOKE CITY
OCEAN HWY U S 13
VIRGINIA
SOMERSET
COURTHOUSE HILL RD
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CECIL
HOWARD
KENT
MONTGOMERY
ANNE ARUNDEL
QUEEN ANNES
CAROLINE
PRINCE GEORGES
TALBOT
CHARLES
CALVERT
DORCHESTER
WICOMICO
ST MARYS
WORCESTER
SOMERSET
Delaware
WICOMICO
WORCESTER
SOMERSET
POCOMOKE RIVER
Virginia
LEGEND
Cities, Towns
State Lands
Designated Areas of Critical Concern,
Maryland Department of State Planning, 1981
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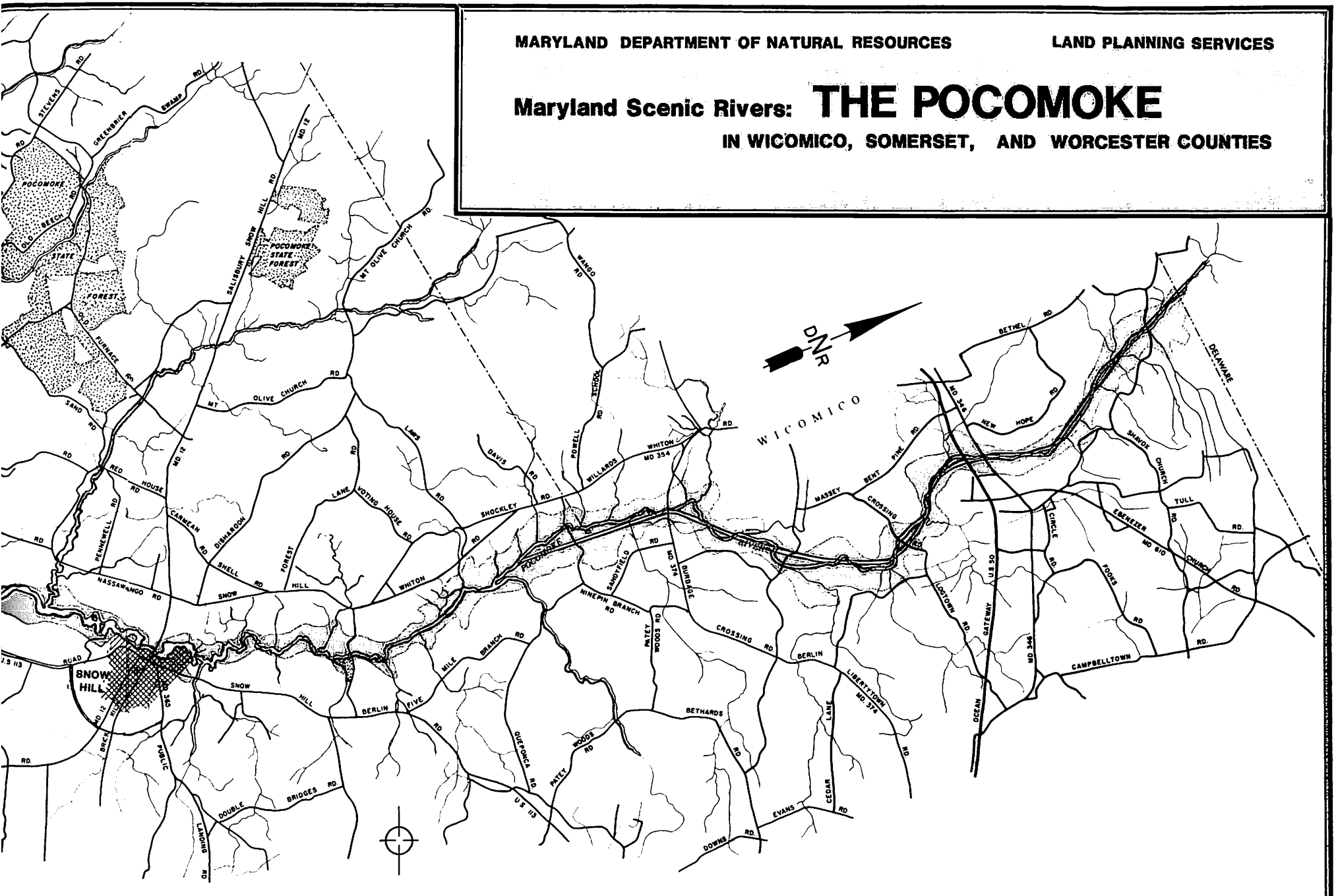
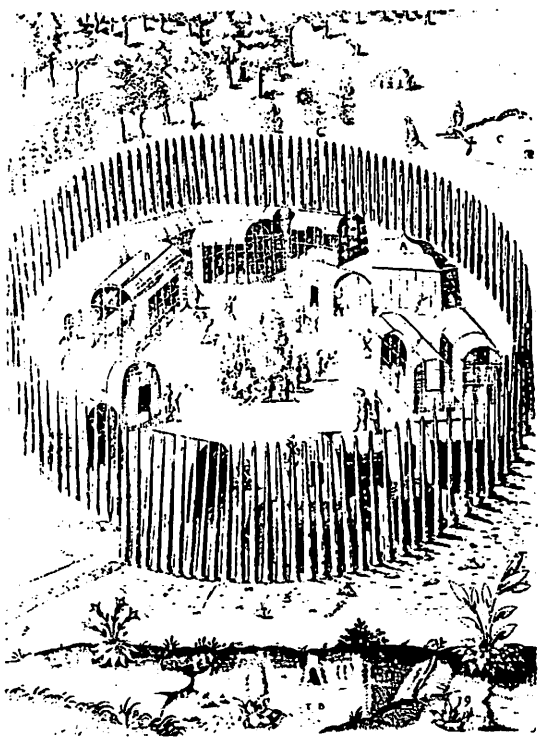
DNR

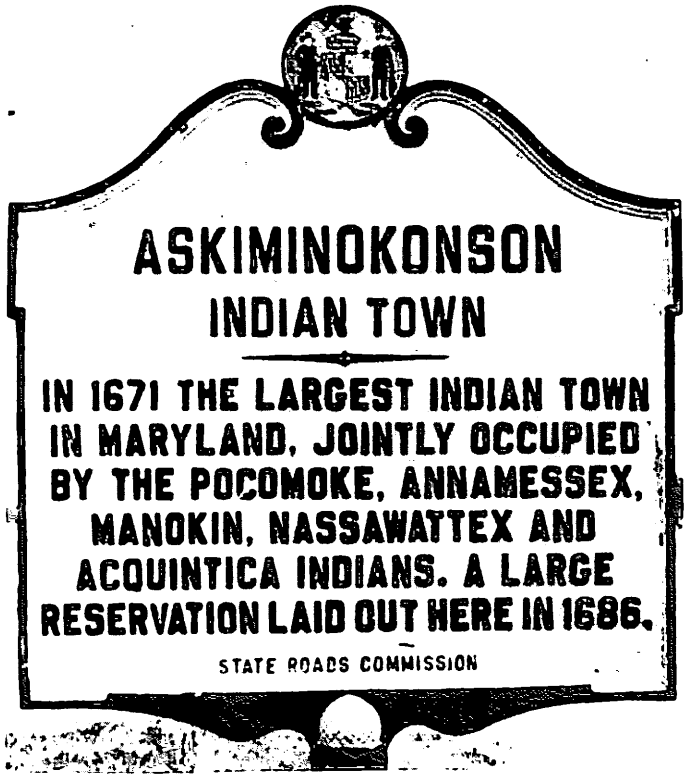
MARYLAND DEPARTMENT OF NATURAL RESOURCES LAND PLANNING SERVICES

Maryland Scenic Rivers: THE POCOMOKE

IN WICOMICO, SOMERSET, AND WORCESTER COUNTIES







Cultural Resources

Along the Pocomoke River and its tributaries there still remain physical reminders of the history and heritage of the past.

Archaeological findings make authentic reports that Indians were the first inhabitants along the river and set the date of their appearance in the area around 10-12,000 BC. There is evidence that several major tribes and subtribes had villages along the river shores and tributaries.

The major tribes along the river were called "Pocomokes". There were also the Acquintica, Quandanguam and Nassawattox who formerly lived along tributaries to the Pocomoke. Perhaps these latter peoples had all been under the jurisdiction of the Pocomokes. These Indians and their neighboring tribes were part of a larger Indian linquistic family, the Algonquin Nations. As a result of colonization and the onslaughts made against them by Colonel Edmund Scarburgh of Virginia, the lower Somerset County tribes began to leave their hunting grounds and take up residence in mid-county by 1666. For them and their neighbors a reservation called "Askiminokonson" was set aside in 1686 on the west side of the Pocomoke near the present site of Snow Hill. To this reservation came not only the lower area Pocomoke but some Annemessex and Manokins. They were joined also by some members of still other neighboring tribes—Assateagues, Chincoteagues, Nassawatox and Acquintica. These people, including the Pocomoke, lost their separate identities within a few years and all became known as Assateaques (Clark, 1953). Their town, late in the seventeenth century (1671), became the largest Indian concentration in Maryland. In May of 1686 the Emperor of the Assateagues listed some eight Indian tribes who were under his command at Askiminokonson. Relentless white pressure lead to the departure of this mixed group of Indians northward by 1748. It is generally agreed that the mixed blood "Nanticoke" Indians living in the vicinity of Oak Orchard, Delaware, on Indian River are descendants of those migrant Pocomoke-Assateaque people (Clark, 1953).

The Indians had very little adverse impact on the environment of the river for they eked out a subsistence by hunting, fishing and some farming. This all changed, however with the coming of the first white settlers. Captain John Smith, Giovanni da Verrazano, Bartholomew Gilbert, Luis de Velasco and Henry Norwood were among the first Europeans to visit the Pocomoke River Area. From 1603 to 1620 exploration and mapping of the area was conducted by the English. Despite the problems between the first settlers and the Indians trade developed and continued. By using the abundant natural resources of the river basin for trade, ties with New England and the West Indies

developed as settlements of Dutch, English, French and Quaker pioneers from Virginia increased. The late 1700's and early 1800's brought prosperous times to the river basin. Shipbuilding, brick manufacturing, the smelting of iron ore, and tobacco output all expanded. Some plantations were as large as 1,000 acres and employed as many as two-hundred slaves. Primary pioneer activities of logging, trapping, fishing and tobacco cultivation provided exports to trade for rum, sugar and molasses imported from the West Indies. Associated with these industries were the secondary trades of cabinet making and shipbuilding, hat manufacturing, leather tanning and textiles. The underground railroad, the Civil War period and prohibition brought slaves,deserters, smugglers and bootleggers to the dark impenetrable marshes and swamps of the Pocomoke river in those early days. From the Civil War period until the early 1900's activity in the river basin was concentrated around the towns of Snow Hill and New Town (now Pocomoke City). Colorful steamboats connected this isolated area with Baltimore and Washington, and a railroad was completed in 1879.

Reminiscent of the early history of the area are several old houses and churches, the ruins of Nassawango Iron Furnace and a few old steamboat wharves and landings. The old houses include; Beverly of Worcester, Barrel House, Cellar House, Reward, and Puncheon. Beverly is located near Dividing Creek on the east bank of the Pocomoke and is the ancestral home of the Dennis family of Maryland. John Upshur Dennis owned a fleet of ships that carried Pocomoke Cypress to the West Indies and brought back molasses. Also on Dividing Creek stands Barrel House—a dignified eighteenth century dwelling which is supposed to have been a station for Patty Cannon's Underground railroad. Overlooking the Pocomoke River between Pocomoke City and Snow Hill about six miles northwest of Pocomoke City is the legendary Cellar House. Legend says that tunnels leading from the river to the cellar of the house were used to transport and store stolen goods and as a way station on the underground railroad. Another legend of Cellar House is that the owner's wife fell in love with one of his ship's captains and he killed her. Her ghost, they say, still roams the Pocomoke and its shores.

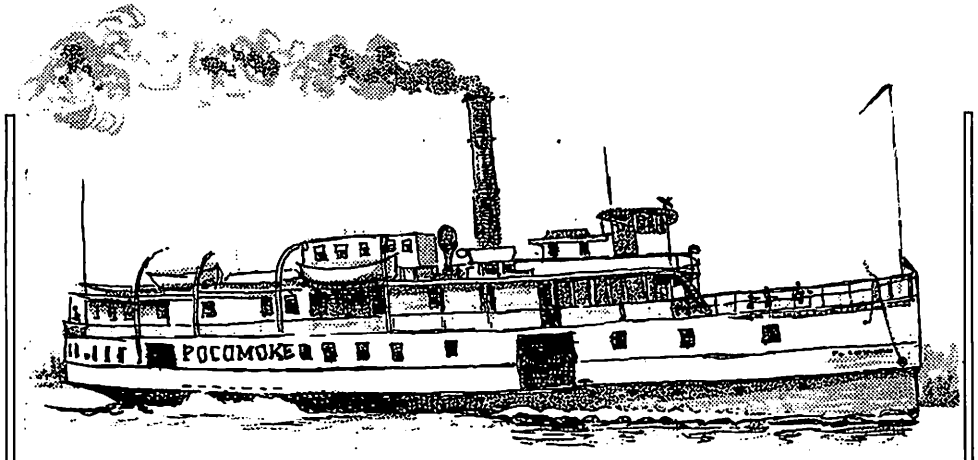
The Tivoli *is shown at Snow Hill, 30 miles above the mouth and the last stop on the Pocomoke River route.*

Beverly—An Early Maryland Home.

Because the Reverend Francis Makemie came to Maryland from Ireland in 1683 and sailed up and down the Pocomoke River founding churches at Rehobeth, Snow Hill and Pocomoke City, the Pocomoke can be called the "Gateway of Presbyterianism" in America. His churches at Rehobeth are claimed to be the oldest Presbyterian churches in America (Worcester County undefined material).

The ruins of Nassawango Iron Furnace are found along Nassawango Creek about three miles from its confluence with the Pocomoke. The "old furnace", as it is called by local residents, was once surrounded by a thriving village called Furnaceville or Furnacetown. There were individual homes, a general store, hotel, church, tavern, grist mill, saw mill, school, warehouse and a 14 room Ironmasters mansion. Operation of the furnace was abandoned in 1847 because the iron which was smelted from bog ore from along Nassawango Creek was of very poor quality.

Nassawango Iron Furnace



Before overland passage was fully established almost all freight and passenger traffic was carried on the waters. Ships, barges and boats of all kinds regularly plied the black waters of the Pocomoke. Several steamship lines operated between the Eastern Shore and Baltimore and during peak periods made stops at Rehobeth and Shelltown as well as at the several other landings along the Pocomoke River. Special Ships were built to make traveling the narrow and crooked Pocomoke easier. These big ships were called "side-wheelers" and were built in great numbers from the War of 1812 until about 1920. Nowadays, except for an occasional vessel that brings fertilizer or oil up to Snow Hill, ships seldom travel the black waters of the Pocomoke, the old landings are rotting into the water and the roads leading to them are overrun by forest.

Old Wharves and Landings
Kensey, 1967

Mouth of River	Dividing Creek	Red Landing
Shelltown	Pusey Landing	Stimsons Wharf
Bullbegger Creek	McMasters Wharf	Nassawango Creek
Pitts Wharf	Cottingham Ferry	Fishhawks Nest
Pitts Creek	Cellar House Landing	Rice Fields
Cedar Hall Wharf	Wills Landing	Cypress Point
Rehobeth Wharf	Milbourne Landing	Dyghtons
Powells Wharf	Callahan Landing	Shipyard
Puncheon Landing	Mattaponi Ferry	Snow Hill Bridge
Railroad Draw Bridge	Adams Wharf	Duck Island
Shipyards	Deep Landing	Mullets Bay
Pocomoke City	Corkers Creek	Fishhawks Island
County Draw Bridge	Weeks Landing	Haywards Landing
Stevensons Wharf	Shad Landing	Purnell Creek
Winter Quarter	Moores Landing	Blue House Landing
Careys Creek	Shabaroon Point	Porters Bridge

Soils

The Pocomoke river is bounded almost entirely by a band of three soil associations; muck, alluvial and tidal marsh.* These soils are usually water-logged, are subject to periodic flooding, have limited mineral values and are considered highly unsuitable for development. Suitability for development is generally based upon engineering properties and percolation characteristics. The rate of percolation usually determines whether or not the soil on the site can facilitate a septic-tank type of sewage disposal. The soils in these associations are also unsuitable for farming, earthwork, pipeline construction, road and highway location, campsites, athletic fields, cemeteries and sanitary landfills, but they are among the few soil associations in the watershed which, because they have remained undeveloped, provide the sole remaining habitat considered excellent for plants that provide food and shelter for waterfowl, furbearing animals and other wildlife.

There are several areas that are devoid of wetlands along the Pocomoke River which have soils suitable for development. In Somerset County near Rehobeth, the Matapeake-Mattapex soil association is well suited to development and extends along the River in three locations covering approximately three miles of shoreline. In Worcester County three soil associations that include soils suitable for development touch the river's edge in several locations: 1) the Lakeland Klej-Plummer Association lies along the Pocomoke River in two places near the river's edge and at Snow Hill, 2) the Mattapex-Matapeake-Othello Association is adjacent to the river in one location at the Virginia boundary, and 3) the Fallsington-Woodstown-Sassafras Association lies along the River in the Pocomoke City area. In Wicomico County no soil associations suitable for development lie along the river banks, but the Evesboro-Klef association is located quite near the river adjacent to the muck association.

*See United States Department of Agriculture Soil Conservation Service Soil Surveys for Worcester, Wicomico and Somerset Counties, Maryland.

Wetlands

There are forty-one wetland areas, consisting of several different types, which form an almost continous band along both banks of the Pocomoke River and its two major tributaries—Dividing and Nassawango Creeks. These wetlands total approximately 17,944 acres. The natural resources that are most abundant and those which contribute most dramatically to the scenic values of the Pocomoke River occur in the wetlands that lie in the floodplains along the river and its tributaries. These wetlands have a high functional value: 1) they absorb large quantities of water providing valuable erosion and flood control, 2) they act to retard pollution by filtering out some of the chemicals, sediment and nutrients that would otherwise enter the river, 3) they provide unique habitat for plant and animal species (some of the most unusual varieties of flora and fauna in the Pocomoke watershed are found in the wetlands along the river and its tributaries), 4) they serve as spawning, feeding and nursery grounds for fish and are the key in the food chain which supports such marine life as crabs, oysters and clams, 5) they serve as nesting grounds and habitat for many species of song and shore birds and waterfowl, 6) they have extremely high recreational potential for fishing, crabbing, nature study, bird watching, hunting and trapping, and 7) they provide valuable scenic buffer between the river and the remainder of the watershed (Metzgar, 1967).

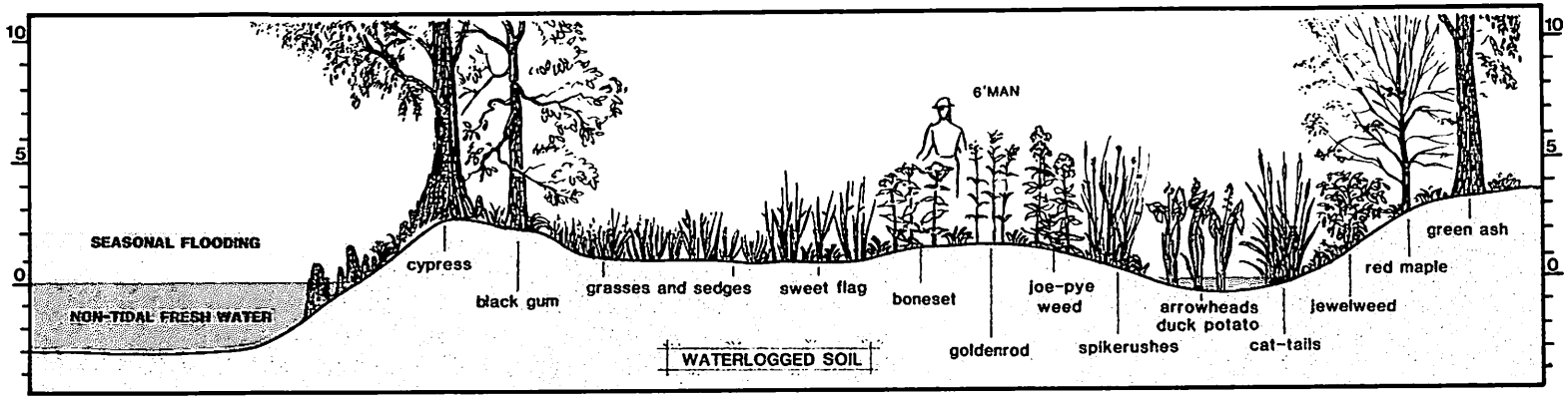
There are eight different types of wetlands found along the Pocomoke River and its tributaries. These include seasonally flooded wooded basins or flats (type 1), inland open fresh water (type 5), shrub swamp (type 6), wooded swamp (type 7), bogs (type 8), coastal shallow fresh marsh (type 12), irregularly flooded salt marsh (type 17), and coastal salt meadow (type 16).

Seasonally flooded wooded basins or flats are found extensively throughout the river basin. One-hundred and twenty-five wetland depressions of variable sizes including a pitcher plant bog (type 8) were identified during a detailed wetland inventory conducted by SCS. The outside peripheral edge of these depressions are usually also type one wetlands.

Wooded swamps are the most prevalent wetland types in the watershed and are found in at least thirty-seven different places along the river. Coastal shallow fresh marshes are located in four areas, two of which are at the river's mouth and two near Snow Hill. Coastal salt marshes are also located in four areas, all of which are at the river's mouth. Shrub swamps are located near the mouth of the river and along Dividing Creek. They are also found along Nassawango Creek

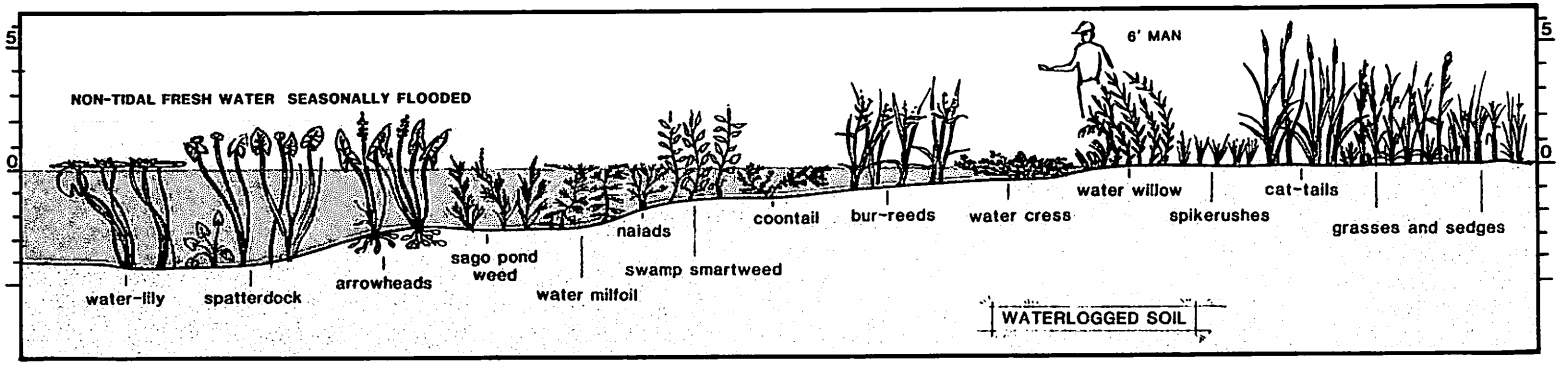
and in the area near Whiton Crossing. Inland open fresh water wetlands are located in two areas, one of which is near the mouth of the river and the other in Wicomico County. None of the wetlands along the river are currently being used for commercial or residential activity. However, it is interesting to note that, since 28,511 acres of wetlands were first identified in the Pocomoke river watershed twenty years ago by the Maryland department of Natural Resources, 10,567 acres or 37% of those wetlands were transferred to other uses. This transformation reduced the overall wetland value of the area. Greatest alterations to the wetlands occurred in Wicomico and Worcester Counties, from the Delaware state line to Porter's Crossing, involving almost complete loss of wooded swamps (type 7) by reclamation projects.

Present wetland policies and studies should aid in the prevention of needless loss of wetlands. However, constant monitoring of wetland acres is necessary because the protection of the natural qualities of the wetlands along the Pocomoke river could be the single most important step in retaining the scenic character of the river.



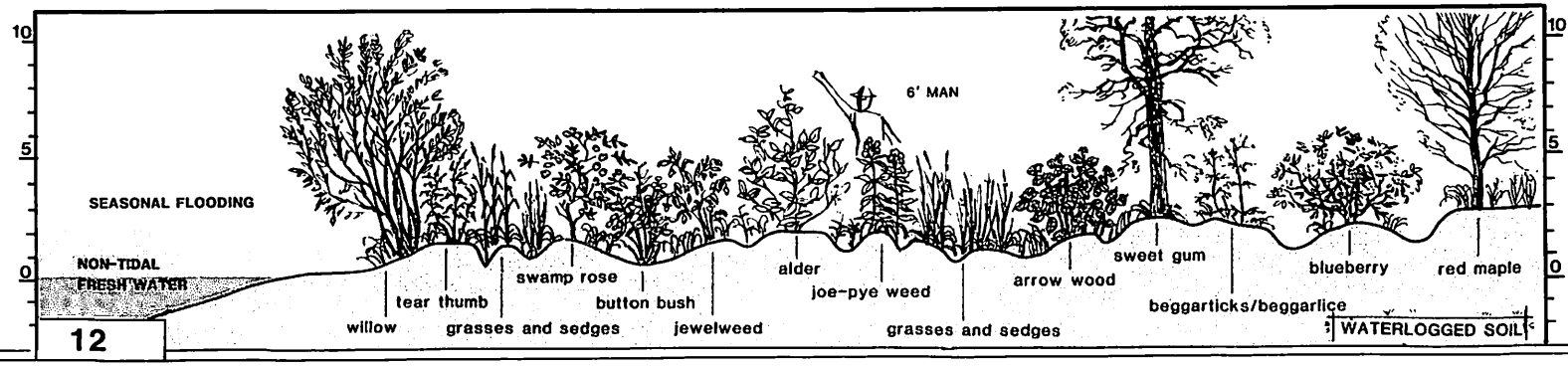
WETLAND TYPE 1

SEASONALLY FLOODED FLATLANDS AND BASINS



WETLAND TYPE 5

INLAND OPEN FRESH WATER



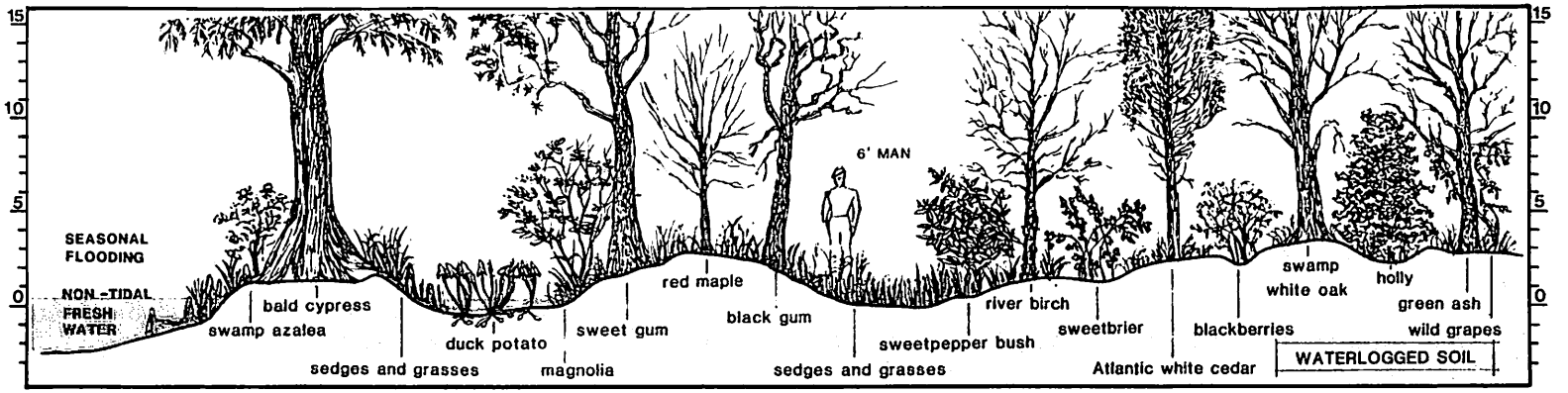
WETLAND TYPE 6

SHRUB SWAMP

DNR

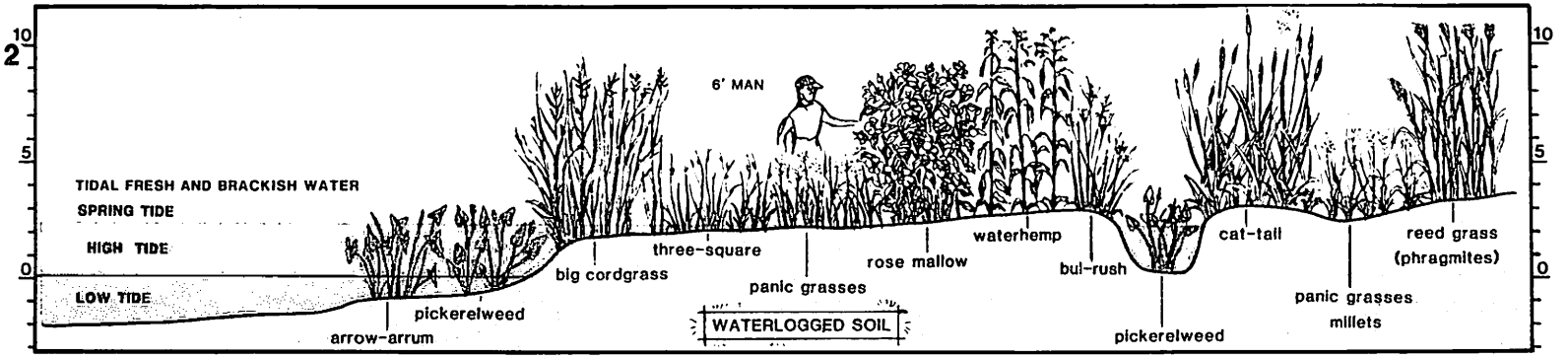
WETLAND TYPE 7

WOODED
SWAMP



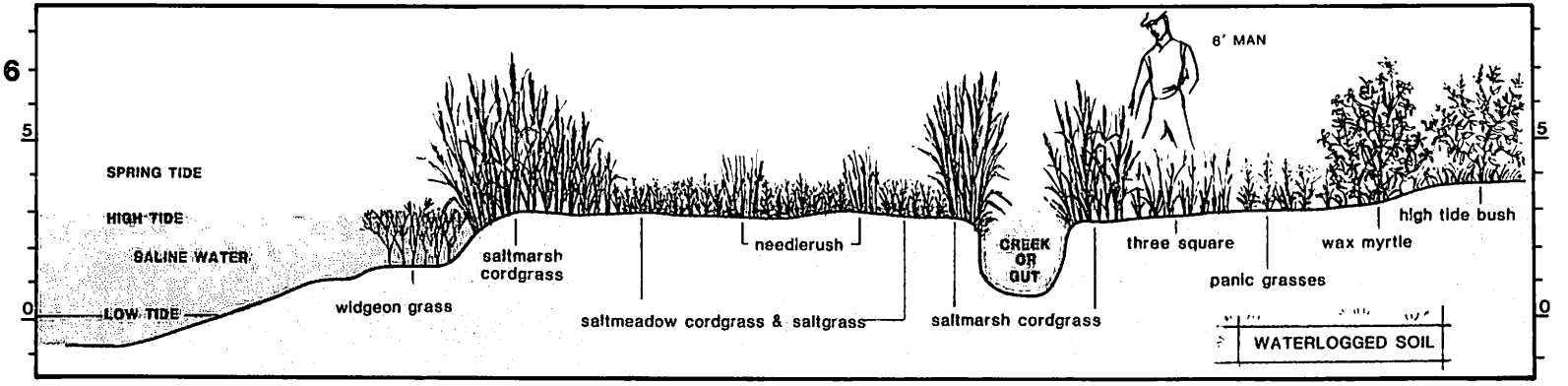
WETLAND TYPE 12

COASTAL
SHALLOW
FRESH
MARSH



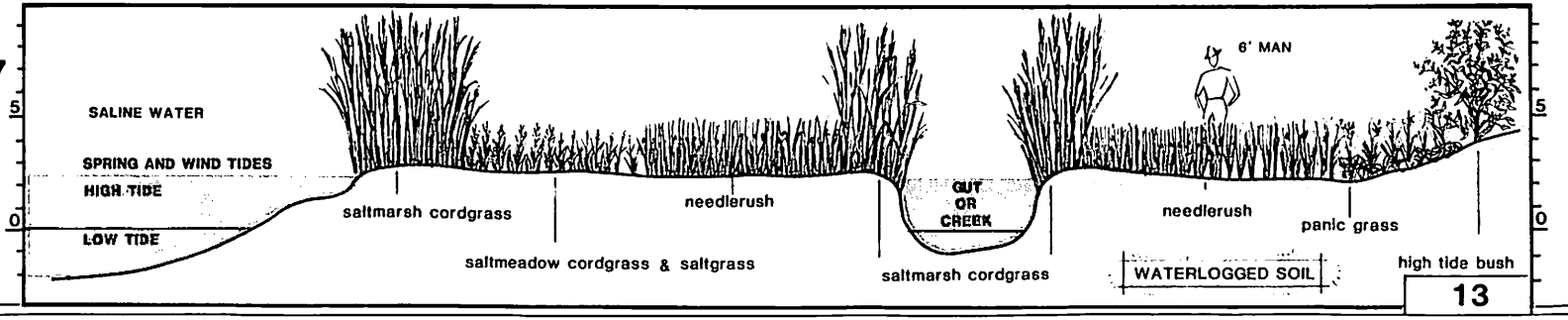
WETLAND TYPE 16

COASTAL
SALT
MEADOW



WETLAND TYPE 17

IRREGULARLY
FLOODED
SALT
MARSH



Water Quality

The waters of the State of Maryland are divided into classes. For each class water quality standards are set which delineate maximum or minimum in-stream levels for various water quality parameters. The parameters are dissolved oxygen, fecal coliform, pH, turbidity and temperature.

Dissolved oxygen (DO) depletion in waters caused by pollution can place stress on aquatic animals and reduce their ability to meet the demands of their environment. In extreme cases it would cause death by oxygen starvation.

Fecal coliform is a type of bacteria found in the gastrointestinal tract and feces of warm-blooded animals. Fecal coliform is used as an indicator of pathogenic organisms.

The pH (hydrogen ion concentration) is a measure of acidity. The pH scale is zero to 14, less than 7 the water is acidic, 7 neutral and greater than 7 is alkaline. Natural waters have a pH typically between 6.5 and 8.5. Acidic waste can exert stress conditions which kill aquatic life and basic conditions (pH above 8.5) begin to decrease reproduction in many aquatic species.

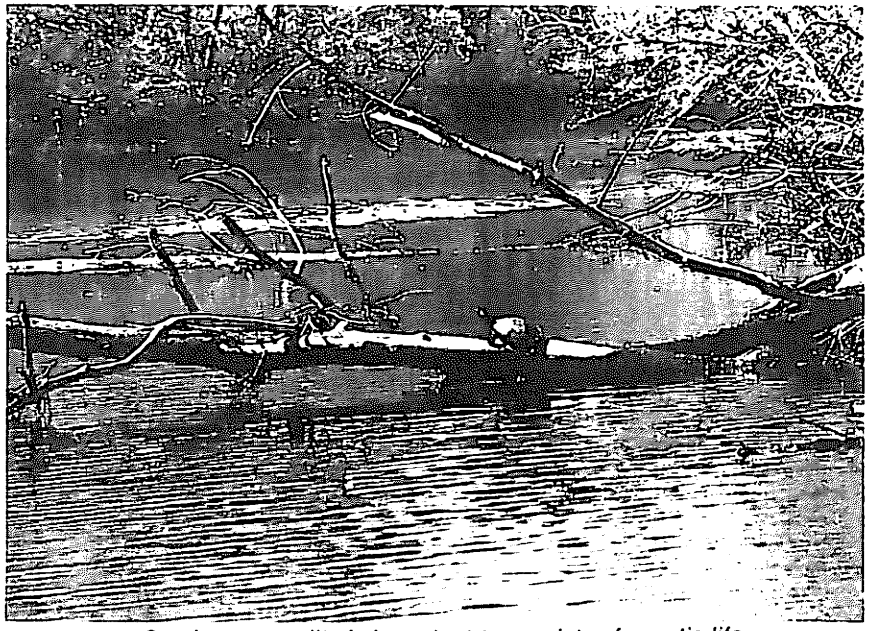
Turbidity is the cloudiness in water due to the suspension of silt or finely divided matters.

Temperature is the degree of hotness or coldness measured on a definite scale.

According to the *208 Water Management Plan for the Pocomoke River Basin* there are three widespread water quality concerns in the Pocomoke River Basin: bacterial contamination, low dissolved oxygen, and excess plant nutrients. These conditions can be attributed to both point and/or nonpoint sources of pollution or natural conditions, depending on the area.

Bacterial contamination is widespread in the basin. The areas where bacterial standards violations are most apparent are those areas which are closed to shellfish harvesting. Bacteriological contamination can result from a number of sources. The most probable sources in the Pocomoke Basin are failing septic systems, urban runoff, runoff from agricultural land used to dispose of or store animal waste, and improperly treated domestic or industrial wastewater. Trend network sampling and intensive survey samplings conducted in 1976 and 1977 show violations of the /Class I bacteriological standards in the Pocomoke River mainstem below Snow Hill all the way to Shelltown. Particular problems were noted in Wagram Creek and Rehobeth Branch. Sampling dome above Rt. 50 also indicates bacteriological contamination. All other areas of the basin meet water quality standards for bacteria.

Relatively low dissolved oxygen levels are very common throughout the basin. The shallow, sluggish streams are naturally low in dissolved oxygen because of the leaching of materials from the acid soils associated with the surrounding marsh and swamp lands. Other than the natural causes in the Pocomoke Basin, municipal and industrial discharges, stormwater runoff from urban and agricultural land, and failing septic systems are the most probable sources related to low dissolved oxygen conditions. Another cause of low dissolved oxygen conditions are excessive amounts of nutrients which can lead to algae

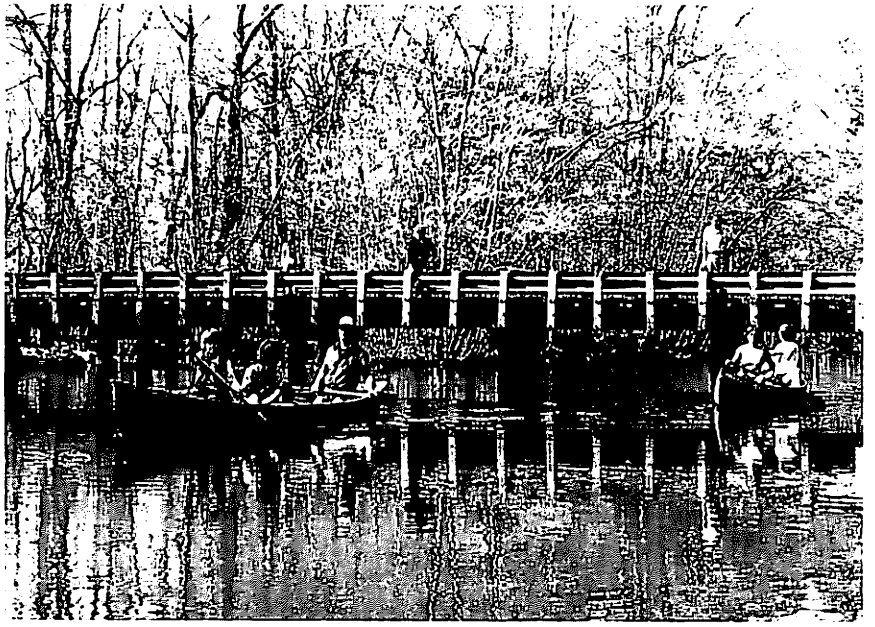


Good water quality is important to a variety of aquatic life.

blooms under certain conditions. These algae blooms can block out sunlight, thus reducing photosynthisis of submerged plants. This in turn lowers the dissolved oxygen level of the water body. Typical cyclical fluctuation of oxygen levels can create stress for aquatic organisms.

The waters of the Pocomoke River are designated as Class I. This means that the water quality should meet Class I water quality standards set by the State. These include: water contact recreation (boating and swimming); spawning and/or nursery area for white perch, striped bass, spot, croaker and weakfish; limited commercial and recreational fishing; shellfish harvesting (especially hard shell clams); and wintering area for geese, swans and various species of ducks.

Good water quality and quantity can be insured by retaining soils and maintaining vegetative cover along the river and in the watershed.



Good water quality is important for water contact recreation and fishing.

WATER QUALITY STANDARDS FOR THE POCOMOKE RIVER

(Regulation 08.05.04.03, Maryland Water Resources Administration)

STANDARDS FOR CLASS I WATERS

(Water Contact Recreation & Aquatic Life)

(1) Bacteriological Standards

There shall be no sources of pollution which constitute a public health hazard. If the fecal coliform density exceeds a log mean of 200/100 ml, the bacterial water quality shall be considered acceptable only if a detailed sanitary survey and evaluation discloses no significant public health risk in the use of the waters.

(2) Dissolved Oxygen Standard

The dissolved oxygen concentration shall be not less than 4.0 mg/liter at any time, with a minimum daily average of not less than 5.0 mg/liter, except where, and to the extent that, lower values occur naturally.

(3) Temperature Standard

For all discharges of heat, the maximum temperature of receiving waters beyond the mixing zone determined in accordance with Regulation .13 may not exceed 90°F (32°C), or ambient temperature of the receiving waters, which ever is greater.

(4) pH Standard

Normal pH values must not be less than 6.5 nor greater than 8.5, except where—and to the extent that—pH values outside this range occur naturally.

(5) Turbidity

a. Turbidity may not exceed levels detrimental to aquatic life; and

b. Within limits of Best Practicable Control Technology Currently Available, turbidity may not exceed for extended periods of time those levels normally prevailing during periods of base flow in the surface waters; and

c. Turbidity in the receiving water resulting from any discharge may not exceed 50 JTU (Jackson Turbidity Units) as a monthly average, nor exceed 150 JTU at any time.

Channel Modification

The Pocomoke River has been modified for both drainage and for navigation. Because of the high water table and waterlogged soils, drainage for agricultural purposes has been undertaken in the Pocomoke watershed ever since the early settlement period (1843-1970). During this period clearing of the river consisted primarily of the removal of fallen trees and logs. In 1912 and 1913 dynamite was used to straighten some sections of the old channel. Various methods for draining the channel and levying taxes in relation to drainage were proposed in 1916 and 1918, but were never implemented.

Perhaps the most significant drainage of the Pocomoke River began in 1939 when work was performed under the Civilian Conservation Corps (CCC) and the Works Project Administration (WPA) to remove trees and sunken logs from the lower sections of the channel. The Maryland Legislature made available state funds for drainage work on the river, and the Commissioners of Wicomico County and Worcester County also agreed to appropriate funds for two years. Monies were then provided on the condition that a Civilian Conservation Corps could be secured to do the clearing and supervise the work. In August, 1939, construction of a channel was started and the CCC camp was established. (Pocomoke River, Preliminary Study, 1968).

Survey work to obtain information for design and construction plans was started in November, 1939. Channelization started at a point one mile below Whiton Crossing. From this starting point upstream to the Delaware state line the distance following the old river bed was 17.23 miles. This distance was shortened to 14.4 miles following the relocated line as it is today. The average depth of cut was about 7 feet, with a bottom width at the beginning point of 60 feet. At the Maryland-Delaware state line the bottom width was reduced to 20 feet.

There are 14 major watersheds as designated by conservation need inventory which use the Pocomoke as an outlet. Six public drainage associations have taken advantage of Public Law 566, the *Watershed Protection and Flood Prevention Act,* in the past few years and numerous groups have organized small drainage projects.

During early steamboating days there was strong opposition on the part of operators to the sending of their large craft above Corkers Creek. This situation was remedied by cut-through canals made by the U.S. Army Corps of Engineers in 1879-1888 when many thousands of cubic yards of spoil were removed to straighten the river's course. These canals, known as First Cut, Second Cut and Thoroughfare, were located respectively near Robin's Wharf, Dightons (Dyghtons) and between Second Cut and Cypress Point (Arcadia, 1977).

At very low tide the muds located at the mouth of the river also became somewhat of a barrier to shipping, especially to large schooners and steamboats late in the last century. Because of the oozy, drifting nature of these muds it became impossible to keep the channel open. Thus, in the 1930's, a short-cut canal was dredged by the Army Corps of Engineers. It was six feet deep at the base of the peninsula and extended out to Williams Point on the north side of the river. This relocation of the entrance to the Pocomoke eliminated the trouble crossing the muds and made the point into an island.

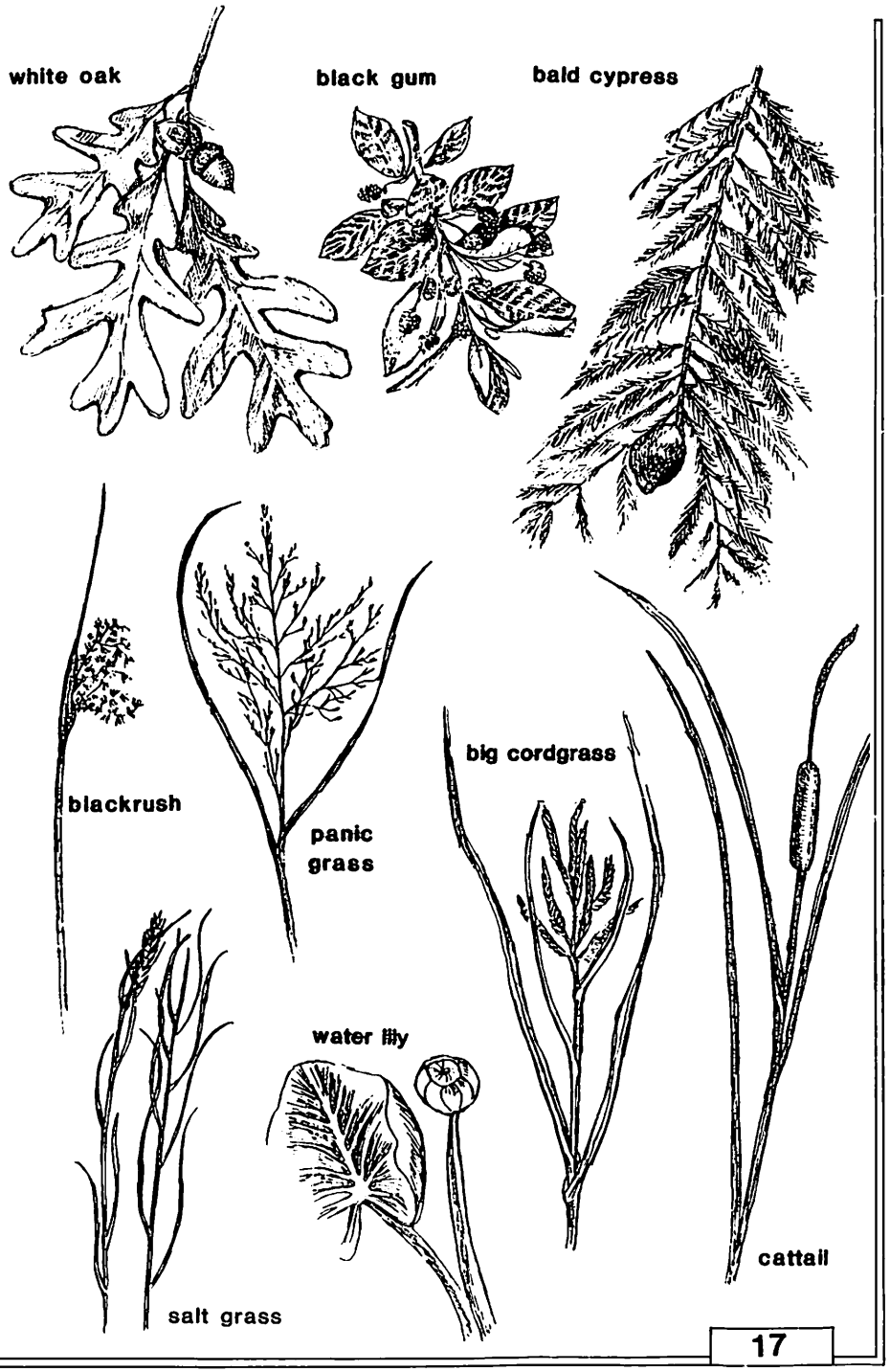
Biological Resources

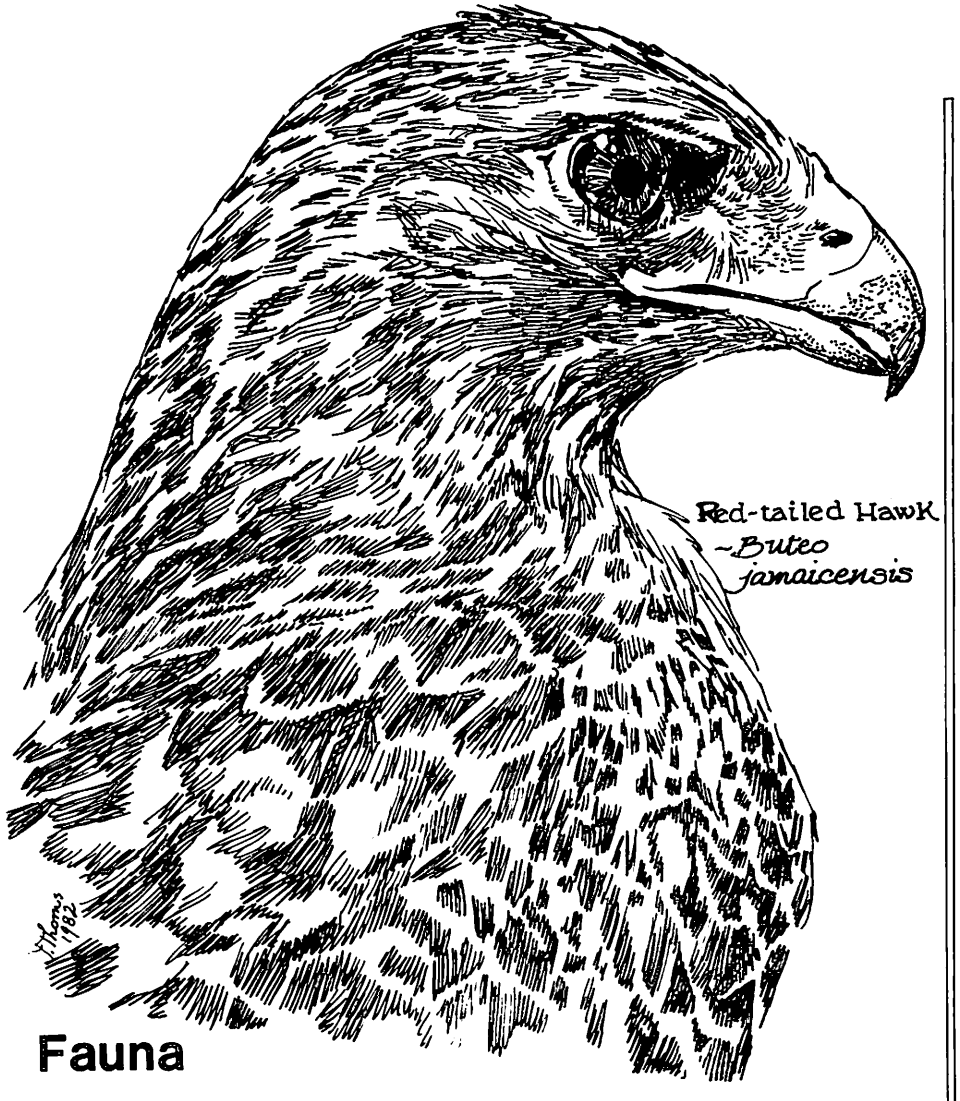
Flora

There are seventy-two families of plant life that have been identified in the Pocomoke River wetlands. Of the total flora 40% range largely southward, while only 3.0% are varieties found exclusively in northern climates. The other 57% are found in both northern and southern climates. Except for the grassy wetlands near the mouth of the river, almost all of the acres of wetlands in the watershed are covered by an oak-gum cypress forest of bottomland hardwood (Beaven and Oosting, 1939). Because of its location at the northermost extremity of its normal growth range, this southern overflow forest includes the most concentrated stands of cypress and Atlantic white cedar in the State of Maryland. The cypress seldom forms extensive pure stands but may be seen along the river edge in most areas. Local old growth cypress trees are known to have reached heights of one hundred and ten feet. The Atlantic white cedar is a species that is generally rare in Maryland. Other primary species of trees in the forest include sweetgum, green ash, and red maple. Secondary species include swamp white oak,beech, black gum, and holly. On higher ground are found loblolly pine, pond pine, shortleaf pine and miscellaneous oaks and hickories. Understory species include bayberry, strawberry bush, trumpet honeysuckle, viburnum, highbush blueberry, and wild azaela.

Plant life identified in the grassy meadow wetlands near the mouth of the river includes; water lilies, coontail, salt grass, blackrush,cattail, big cordgrass, and panic grass fringed to the landward by willows, small maples and sweetgums.

There are several rare, threatened or endangered plant species located in the Pocomoke drainage area, these include: Seaside Alder *(Alnus maritima),* Dwarf Trillium *(Trillium pusillum* var *virginianum), Micranthemun micranthemoides*–a hemianthus, Crossvine *(Arisostichus capreolata),* Pale Green Orchis *(Habenaria flava)* and Pitcher Plant *(Sarracenia purpurea)* as well as several rare arrowheads *(Sagittaria spp.)* (Broome, 1979).





Fauna

The density of vegetation and food abundance in the Pocomoke River wetlands provides an exceedingly rich ecosystem where a wide diversity of fish and wildlife flourish. More than 27 species of mammals, 29 reptiles, 14 amphibians and 172 species of birds (resident and migratory) have been identified in the wetlands adjacent to the river. This area has been described by ornithologists as one of the best environments for bird life on the Atlantic coast. In addition to the terrestrials and amphibians, the Pocomoke and its wetlands and tributaries support a very high concentration of fish per acre and have one of the best spawning runs in the State for shad and herring. Listed are some of the fauna of the Pocomoke River and adjacent lands.

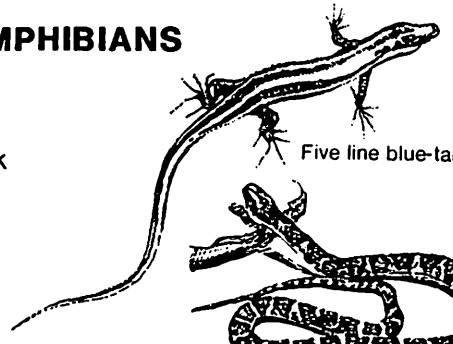
Rare, threatened, or endangered species known to inhabit the Pocomoke River area are the Delmarva fox squirrel *(Sciurus niger cinereus),* the Eastern narrowmouthed toad *(Gastrophryne carolinensis),* the southern bald eagle *(Haliaectus leucocephalus),* the peregrine falcon *(Falco peregrinus),* and the Eastern tiger salamander *(Ambystoma tigrinum tigrinum).* Species of interest found along the Pocomoke include; the carpenter frog, pileated woodpecker, red-headed woodpecker, osprey, Swainson's warbler, and the eastern bluebird. Prior to 1661, eastern black bear, eastern cougar (American lion or puma) and timber wolf were found in the Pocomoke forest, but by 1800 they were extirpated. The passenger pigeon and the Carolina parakeet were also formerly found in the Pocomoke forest. They are now extinct.

Of the animals found in the Pocomoke Basin the only poisonous species is the northern copperhead. The corn snake (or red rat snake) is often confused with the copperhead. Also found in the Pocomoke drainage and mistaken for a poisonous species (cottonmouth moccassin), are the common banded water snake and the redbellied water snake. The cottonmouth, however, does not occur in the Pocomoke area.

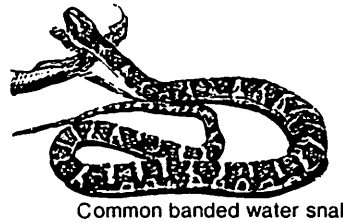
From the days of the Indians the Pocomoke has been a fish paradise where numerous species, and in the early days, large sturgeon spawned. Both fresh and salt water species occur in the watershed. Studies prior to 1968 showed that the Pocomoke River supported at least two-hundred pounds of fish per acre of water and at least one-thousand pounds per acre during shad and herring runs. During recent years, however, the populations of shad and herring in the Pocomoke have declined. Sportfishing is good on the river. In the Sound alewives catfish, croakers, eels, shad, gray sea trout, striped bass, spot, white perch and yellow perch are caught by such methods as haul seines, gill nets (anchor, drift and stake nets) pound nets, and fyke nets. In the river proper, largemouthed bass, blue gill, crappie, carp, catfish, alewives, glut herrings, American shad, gizzard shad, white perch, yellow perch, pumpkinseed sunfish, etc. are caught by sport fishermen. Fishing is also done in the mill ponds near the river. Sportfishing for striped bass, spot, croakers, white perch, bluefish, channel bass (red drum), black drum, and various sea trouts is extremely popular. Fisheries are located as follows: pound nets—Shelltown; drift and stake nets—Pocomoke City, Snow Hill and vicinity; bow nets—Pocomoke City and Snow Hill; fyke nets—mouth of Nassawango Creek. In the sound the fisheries are located below the north of the Virginia side near Saxis Island. The river was stocked annually with millions of both shad and yellow perch from 1890-1943. These stockings have produced no demonstrable results. Non-indigenous largemouth bass and crappie have been introduced, and are well established. Striped Bass are now being stocked near Pocomoke City.

REPTILES AND AMPHIBIANS

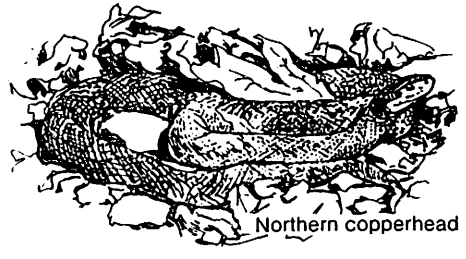
Northern fence lizard
Ground skink
Five line blue-tailed skink
Eastern worm snake
Ring neck snake
Hognose snake
Eastern king snake
Coastal plain milk shake
Redbellied water snake
Rough green snake
Black racer
Corn snake
Black rat snake
Common banded water snake
Northern redbellied snake
Eastern ground snake
Eastern ribbon snake
Common garter snake
Northern copperhead
Musk turtle
Snapping turtle
Spotted turtle
Eastern Carolina box turtle
Northern diamond back terrapin
Eastern painted turtle
Redbellied turtle
Midland painted
loggerhead turtle
Eastern tiger salamander
Marbled salamander
Redbacked salamander
Two-lined salamander
Eastern mud salamander
Eastern spadefoot
Narrowmouthed toad
Fowler's toad
American toad
Carpenter frog



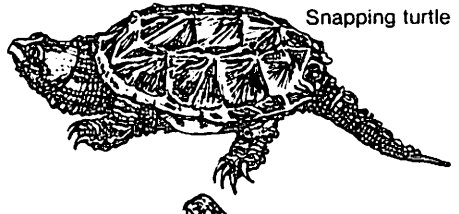
Five line blue-tailed skink



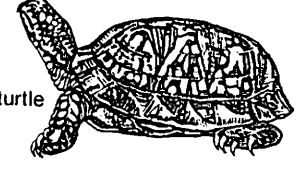
Common banded water snake



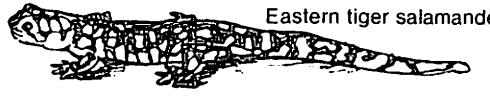
Northern copperhead



Snapping turtle

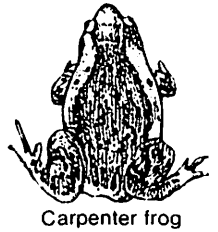


Eastern Carolina box turtle



Eastern tiger salamander

Fowler's toad



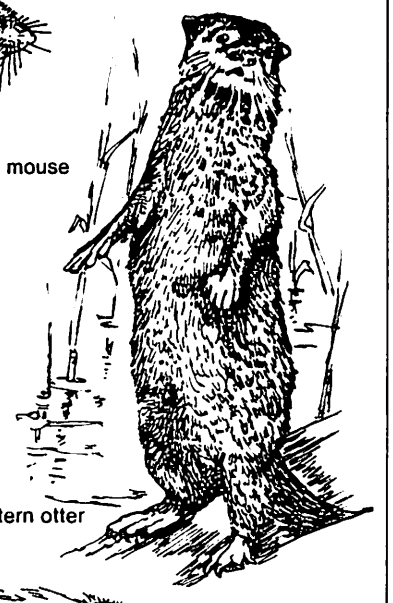
Carpenter frog

Narrowmouthed toad

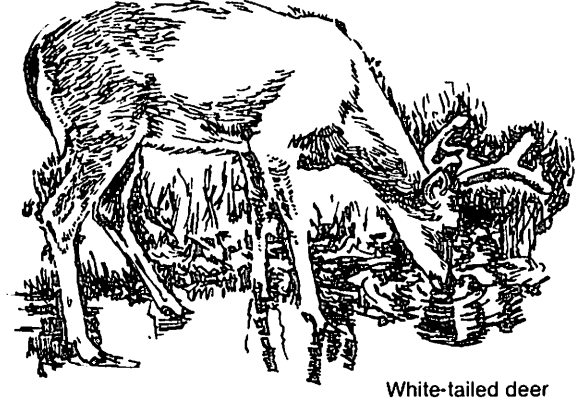
MAMMALS

Fossorials
Common mole
Least shrew
Carolina shrew
Shorttailed shrew
Winged
Silver haired bat
Red bat
Hoary bat
Big brown bat
Rodents
Southern white-footed mouse
House mouse
Brown rat
Common Game Species and Furbearers
White-tailed deer
Southern gray squirrel
Eastern cottontail rabbit
Southeastern mink
Southeastern otter
Red fox
Eastern gray fox
Raccoon
Muskrat
Virginia oppossum
Skunk
Marine
Harbor seal
Bottlenose dolphin

Southern white-footed mouse

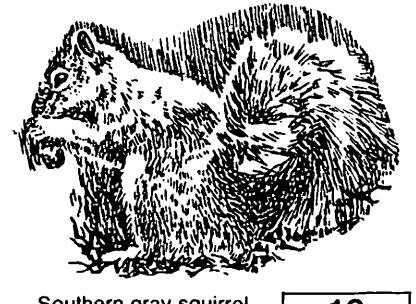


Southeastern otter



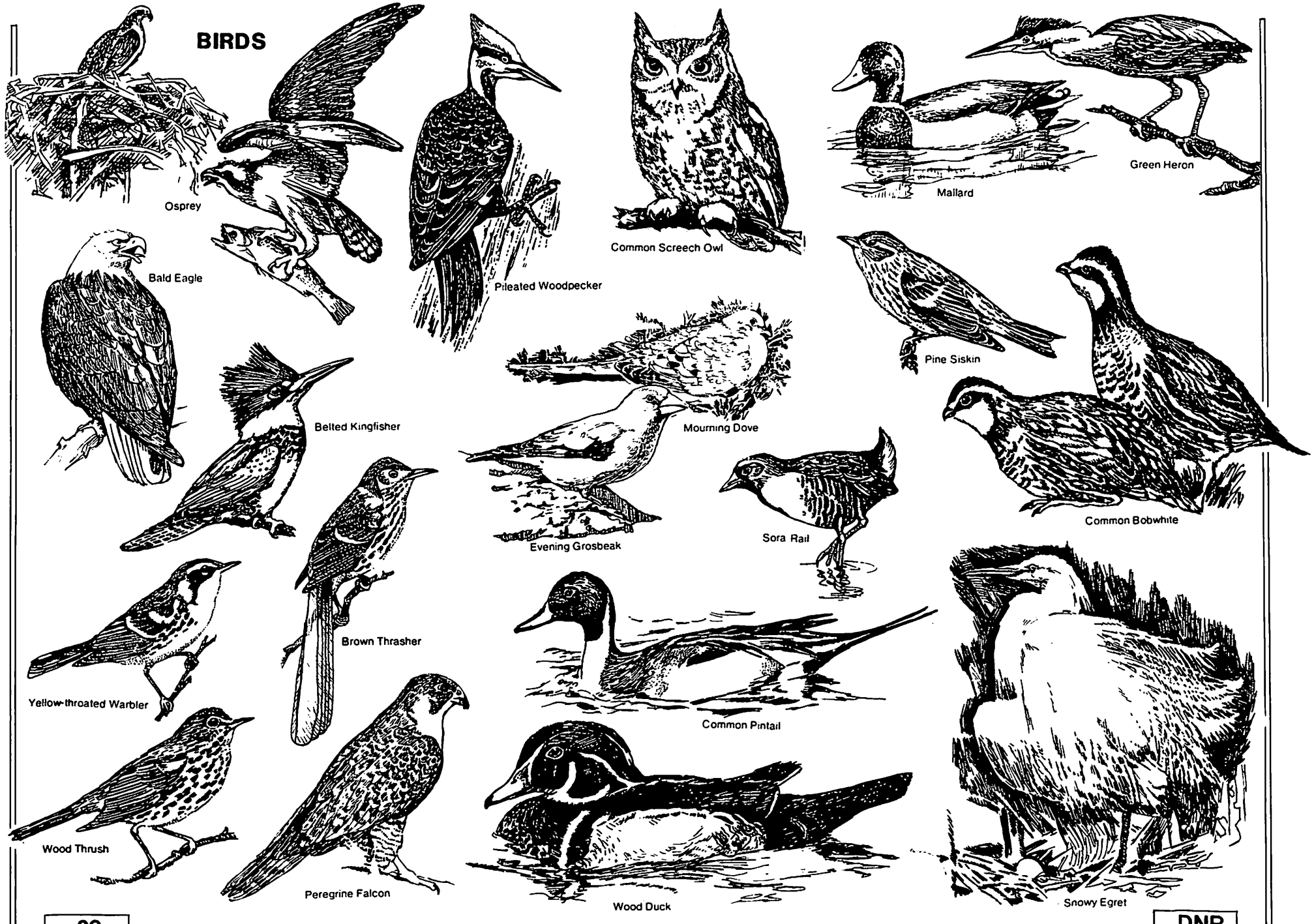
White-tailed deer

Eastern cottontail rabbit



Southern gray squirrel

BIRDS


Osprey
Bald Eagle
Pileated Woodpecker
Common Screech Owl
Mallard
Green Heron
Pine Siskin
Belted Kingfisher
Mourning Dove
Common Bobwhite
Evening Grosbeak
Sora Rail
Brown Thrasher
Yellow-throated Warbler
Common Pintail
Wood Thrush
Peregrine Falcon
Wood Duck
Snowy Egret

BIRDS RECORDED IN THE POCOMOKE DRAINAGE BASIN

B: Breeding **W: Wintering** **M: in Migration only** **PS: Pocomoke Sound or adjacent marshes**

	B	W	M
SWALLOWS			
Tree Swallow	●	PS	
Bank Swallow			●
Rough-winged Swallow	●		
Barn Swallow	●		
Cliff Swallow			●
Purple Martin	●		
JAYS & CROWS			
Blue Jay	●	●	
American Crow	●	●	
Fish Crow	●	●	
CHICKADEES & NUTHATCHES			
Carolina Chickadee	●	●	
Tufted Titmouse	●	●	
White-breasted Nuthatch	●	●	
Red-breasted Nuthatch		●	
Brown-headed Nuthatch	●	●	
CREEPER & WRENS			
Brown Creeper	●	●	
House Wren	●	●	
Winter Wren		●	
Carolina Wren	●	●	
Marsh Wren	●	●	
Sedge Wren	●	●	
MIMIDS & THRUSHES			
Northern Mockingbird	●	●	
Gray Catbird	●	●	
Brown Thrasher	●	●	
American Robin	●	●	
Wood Thrush	●		
Hermit Thrush		●	
Swainson's Thrush			●
Gray-cheeked Thrush			●
Veery			●
Eastern Bluebird	●	●	
GNATCATCHER & KINGLETS			
Blue-green Gnatcatcher	●		
Golden-crowned Kinglet		●	
Ruby-crowned Kinglet		●	
PIPIT, WAXWING & SHRIKES			
Water Pipit		●	
Cedar Waxwing	●	●	
Loggerhead Shrike		●	
STARLING & VIREOS			
European Starling	●	●	
White-eyed Vireo	●	●	
Yellow-throated Vireo	●		
Solitary Vireo			●
Red-eyed Vireo	●		
Warbling Vireo			●

	B	W	M
WARBLERS			
Black & White Warbler	●		
Prothonotary Warbler	●		
Swainson's Warbler	●		
Worm-eating Warbler	●		
Blue-winged Warbler			●
Tennessee Warbler			●
Nashville Warbler			●
WARBLERS & HOUSE SPARROW			
Northern Parula Warbler	●		
Yellow Warbler	●		
Magnolia Warbler			●
Cape May Warbler			●
Black-throated Blue Warbler			●
Yellow-rumped Warbler		●	
Black-throated Green Warbler			●
Cerulean Warbler			●
Blackburnian Warbler			●
Yellow-throated Warbler	●		
Chestnut-sided Warbler			●
Bay-breasted Warbler			●
Blackpoll Warbler			●
Pine Warbler	●		
Prairie Warbler	●		
Palm Warbler		●	
Ovenbird	●		
North Waterthrush			●
Louisiana Waterthrush	●		
Kentucky Warbler	●		
Connecticut Warbler			●
Mourning Warbler			●
Common Yellowthroat	●		
Yellow-breasted Chat	●		
Hooded Warbler	●		
Wilson's Warbler			●
Canada Warbler			●
American Redstart	●		
House Sparrow	●	●	
BLACKBIRDS & ORIOLES			
Bobolink			●
Eastern Meadowlark	●	●	
Red-winged Blackbird	●	●	
Orchard Oriole	●		
Northern Oriole			●
Rusty Blackbird		●	
Boat-tailed Grackle	●	●	
Common Crackle	●	●	
Brown-headed Cowbird	●	●	
JAEGERS			
Pomarine Jaeger			PS
OWLS			
Barn Owl	●	●	
Common Screech Owl	●	●	
Great Horned Owl	●	●	
Barred Owl	●	●	
Short-eared Owl		●	
Saw-whet Owl		●	

	B	W	M
LOONS, GREBES			
Common Loon		PS	●
Red-throated Loon		PS	
Horned Grebe		PS	
Pied-billed Grebe		●	
PELICANS-FRIGATEBIRD			
Double-crested Cormorant			
HERONS-IBISES			
Great Blue Heron	●		
Green Heron	●		
Little Blue Heron	PS		
Cattle Egret	PS		
Great Egret	PS		
Snowy Egret	PS		
Louisiana Heron	PS		
Black-crowned Night Heron	PS	PS	
Yellow-crowned Night Heron	PS		
American Bittern		PS	
Glossy Ibis	PS		
SWANS, GEESE, DUCKS			
Whistling Swan		PS	●
Canada Goose		PS	●
Snow Goose			●
Mallard	●		
American Black Duck	●		
Gadwall		PS	
Common Pintail		PS	
Green-winged Teal		PS	
Blue-winged Teal		PS	
American Widgeon		PS	
Northern Shoveler		PS	
Wood Duck	●		
Redhead		PS	
Ring-necked Duck			
Canvasback		PS	
Greater Scaup		PS	
Lesser Scaup		PS	
Common Goldeneye		PS	
Bufflehead		PS	
Oldsquaw		PS	
White-wing Scoter		PS	
Surf Scoter		PS	
Black Scoter		PS	
Ruddy Duck		PS	
Hooded Merganser		●	
Red-breasted Merganser		PS	
VULTURES-HAWKS			
Turkey Vulture	●	●	
Black Vulture	●	●	
Sharp-shinned Hawk		●	
Cooper's Hawk	●	●	
Red-tailed Hawk	●	●	
Red-shouldered Hawk	●	●	
Broad-winged Hawk	●		
Bald Eagle	●	●	
Northern Harrier	●	●	
Osprey	●		
Peregrine Falcon		●	
Merlin		●	
American Kestrel	●	●	

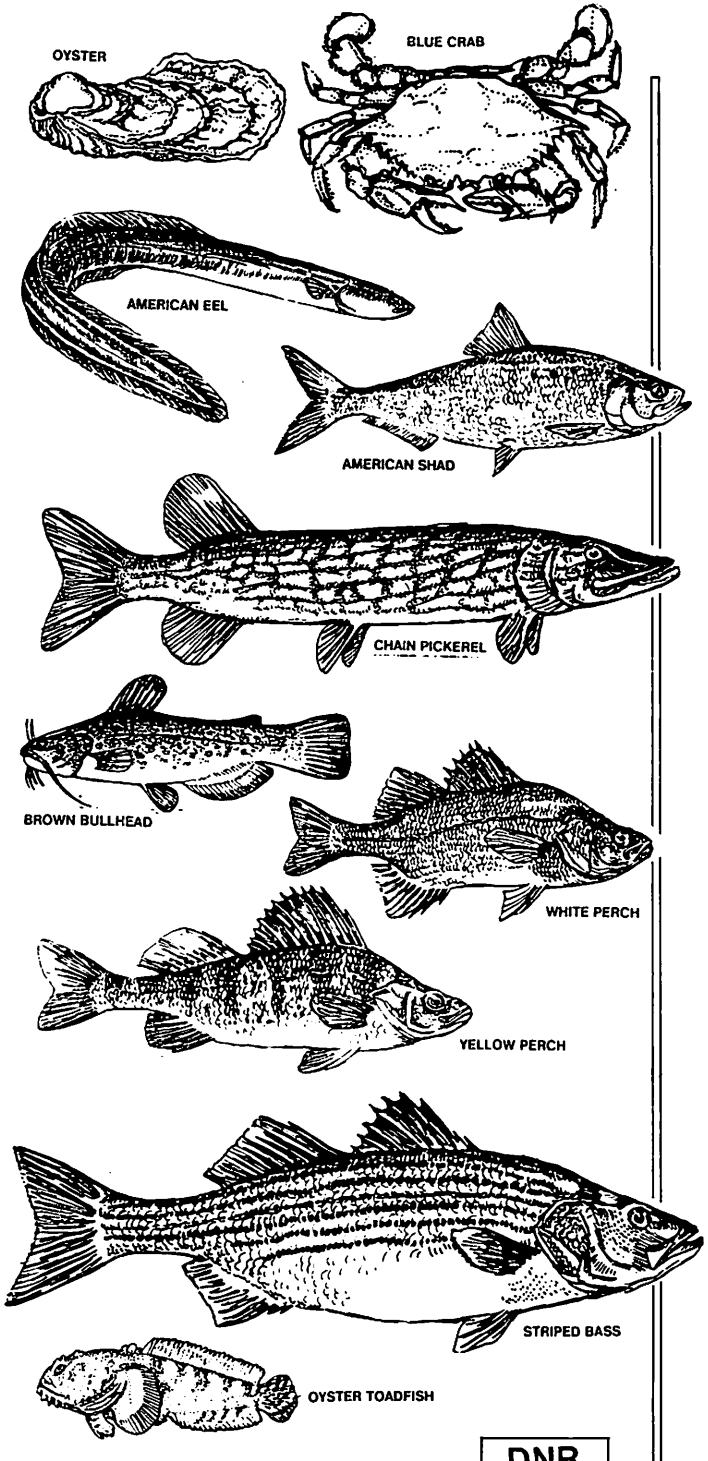
	B	W	M
GROUSE-TURKEY			
Common Bobwhite	●	●	
CRANE-COOT			
King Rail	●	●	
Clapper Rail	PS		
Virginia Rail		●	
Sora		●	
Black Rail		●	
American Coot		●	
OYSTERCATCHER-PLOVERS			
Semipalmated Plover			PS
Killdeer	●	●	
Lesser Golden Plover			PS
Black-bellied Plover		PS	
SANDPIPERS			
Whimbrel			PS
Greater Yellowlegs		PS	
Lesser Yellowlegs		PS	
Solitary Sandpiper			●
Willet	PS		
Spotted Sandpiper			●
Ruddy Turnstone			PS
Wilson's Phalarope			PS
American Woodcock			
Common Snipe			
Short-billed Dowitcher			PS
Sanderling		PS	
Semipalmated Sandpiper			PS
Least Sandpiper		PS	●
White-rumped Sandpiper			●
Pectoral Sandpiper			●
Dunlin		PS	
KINGFISHER & WOODPECKERS			
Belted Kingfisher	●	●	
Common Flicker	●	●	
Pileated Woodpecker	●	●	
Red-bellied Woodpecker	●	●	
Red-headed Woodpecker	●	●	
Yellow-bellied Sapsucker		●	
Hairy Woodpecker	●	●	
Downy Woodpecker	●	●	
FLYCATCHERS & LARK			
Eastern Kingbird	●		
Western Kingbird		●	
Great Crested Flycatcher	●		
Eastern Phoebe	●	●	
Acadian Flycatcher	●		
Least Flycatcher			●
Eastern Pewee	●		
Horned Lark	●	●	
TANAGERS			
Scarlet Tanager	●		
Summer Tanager	●		

	B	W	M
GULLS & TERNS			
Great Black-backed Gull		PS	
Herring Gull		●	
Ring-billed Gull		●	
Laughing Gull	PS		
Bonaparte's Gull		PS	
Gull-billed Tern			PS
Forster's Tern	PS		
Common Tern			PS
Little Tern	PS		
Royal Tern			PS
Caspian Tern			PS
GOATSUCKERS			
Chuck-will's-widow	●		
Whip-poor-will	●		
Common Nighthawk	●		
SWIFT & HUMMINGBIRD			
Chimney Swift	●		
Ruby-throated Hummingbird	●		
SKIMMER & ALCIDS			
Black Skimmer			PS
DOVES			
Rock Dove	●	●	
Mourning Dove	●	●	
CUCKOOS & ANI			
Yellow-billed Cuckoo	●		
Black-billed Cuckoo	●		
GROSBEAKS-CROSSBILLS			
Northern Cardinal	●	●	
Rose-breasted Grosbeak			●
Blue Grosbeak	●		
Indigo Bunting	●		
Evening Grosbeak		●	
Purple Finch		●	
House Finch		●	
Pine Siskin		●	
American Goldfinch	●	●	
Red Crossbill		●	
TOWHEE & SPARROWS			
Rufous-sided Towhee	●	●	
Savannah Sparrow		●	
Grasshopper Sparrow	●		
Henslow's Sparrow			
Sharp-tailed Sparrow	PS	PS	
Seaside Sparrow	PS	PS	
Vesper Sparrow		●	
Northern Junco		●	
American Tree Sparrow		●	
Chipping Sparrow	●	●	
Clay-colored Sparrow		●	
Field Sparrow	●	●	
White-crowned Sparrow		●	
White-throated Sparrow		●	
Fox Sparrow		●	
Lincoln's Sparrow		●	
Swamp Sparrow		●	
Song Sparrow	●	●	
Snow Bunting		●	

CHART OF FISH, SHELLFISH, AND CRUSTATIONS HABITAT AND PROBABLE DISTRIBUTION WITHIN THE POCOMOKE SCENIC RIVER MAPPING SERIES

A :Adults J :Juveniles S :Spawning Area *:Anadromous species seasonally present

MAP NUMBER →	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
OYSTER															AJS
BLUE CRAB													AJ	AJ	AJ
AMERICAN EEL	AJ	AJ	AJ	AJ	AJ	AJ	AJ	AJ	AJ	AJ	AJ	AJ	AJ	AJ	AJ
SEA LAMPREY		AJ	AJS	AJS	AJS	AJS	A	A	A	A	A	A	A	A	A
ALEWIFE HERRING *	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJ	AJS	AJ	AJ	AJ	AJ	AJ
BLUEBACK HERRING *	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJ	AJS	AJS	AJ	AJ	AJ	AJ
HICKORY SHAD *		AJS	AJS	AJS	AJS	J	J	J					AJ	AJ	AJ
AMERICAN SHAD *		AJS	AJS	AJS	AJS	J	J	J					AJ	AJ	AJ
GIZZARD SHAD	AJS	AJS	AJS	AJS	AJ	AJ	AJ	AJ	A	A	A				
MENHADEN								J	J	J	J	J	J	AJ	AJ
BAY ANCHOVY									AJ	AJ	AJ	AJ	AJS	AJS	AJS
STRIPED KILLIFISH										AJ	AJ	AJ	AJS	AJS	AJS
BANDED KILLIFISH					AJ	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJ	AJ
MUMMICHOG						AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJ
SHEEPSHEAD MINNOW													AJ	AJ	AJS
MOSQUITOFISH	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS
EASTERN MUDMINNOW	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS
ATLANTIC STURGEON													A	A	A
LONGNOSE GAR	AJS	AJS	AJS	AJS	AJS	AJS	AJS								
CARP	A	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	A	A	A	A
REDFIN PICKEREL	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	
CHAIN PICKEREL	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS		
WHITE CATFISH		AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJ	AJ	AJ	A
BROWN BULLHEAD	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	
TADPOLE MADTOM	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	
TESSELLATED DARTER	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS						
CREEK CHUBSUCKER	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS		AJS	
GOLDER SHINER	AJS	AJS	AJS	AJS		AJS	AJS	AJS	AJS	AJS	AJS	AJS		AJS	A
SPOTTAIL SHINER	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJ
PIRATE PERCH	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS		AJS	
WHITE PERCH	S	S	S	JS	AJS	AJS	AJS	AJS	AJ	AJ	AJ	AJ	AJ	AJ	AJ
YELLOW PERCH	S	S	S	AJS	AJS	AJS	AJS	AJS	AJ	AJ	AJ	AJ	AJ	AJ	A
SILVER PERCH															A
BLUESPOTTED SUNFISH	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	
BLACKBANDED SUNFISH						AJS									
REDBREAST SUNFISH	AJS	AJS	AJS	AJS											
LARGEMOUTH BASS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	A	A	A	
STRIPED BASS												AJS	AJS	AJ	AJ
BLUEGILL	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJ
BLACK CRAPPLE	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS	AJS					
ATLANTIC SILVERSIDE										AJS	AJS	AJS	AJS	AJS	AJS
ROUGH SILVERSIDE													AS	AJS	AJS
TIDEWATER SILVERSIDE															AJ
THREESPINE STICKLEBACK															AJS
ATLANTIC NEEDLEFISH															AJS
NORTHERN PIPEFISH															AJ
OYSTER TOADFISH															AJS
SUMMER FLOUNDER															AJ
WINTER FLOUNDER															A
HOGCHOKER														AJS	AJS

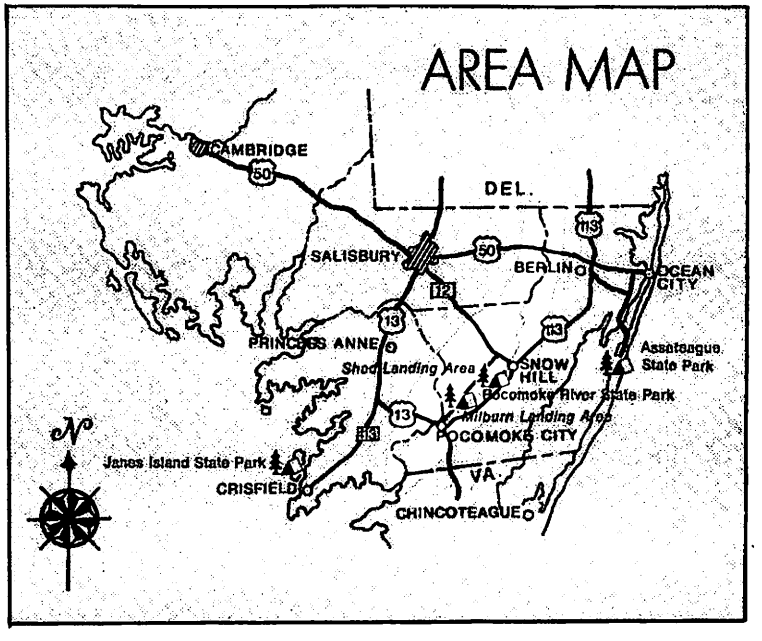


DNR

Recreational Resources

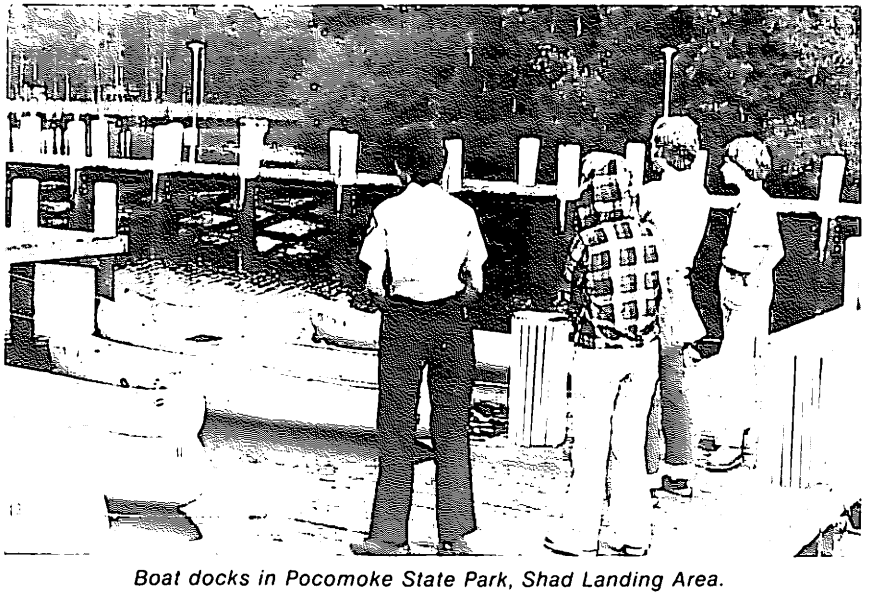
The Pocomoke State Forest including Milburn and Shad Landing areas (collectively known as Pocomoke River State Park), the Pocomoke River Wildlife Management Area and City Parks at both Snow Hill and Pocomike City provide for a wide variety of recreational uses of the Pocomoke River and surrounding areas. These activities include picnicking, camping, swimming, hiking, boating, nature studies, and hunting and trapping. In addition to activities provided for by these areas, canoe trips are frequently sponsored by local individuals, organizations, educational institutions, and Maryland Forest and Park Services.

Pocomoke State Forest—This area contains 13,111 acres of woodland, streams and wildlife habitat adjacent to the Pocomoke River. There are seventy-four miles of roads and trails which are used primarily for fire protection. These roads can also be used by hunters to gain access to the forest which is open to hunting as well as fishing in season. Several miles of trails are provided for four-wheeled vehicles and motorcycles in the forest near Shad Landing. An off-road-vehicle permit is required. Campers and others at the Pocomoke River State Park can use the adjacent forest for related activities.



Pocomoke River

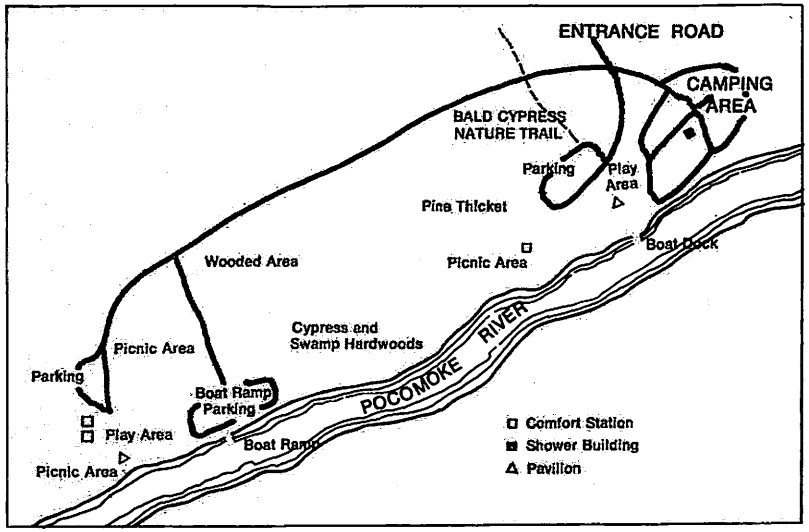
Playgrounds in Pocomoke State Park, Milburn Landing area.



Boat docks in Pocomoke State Park, Shad Landing Area.

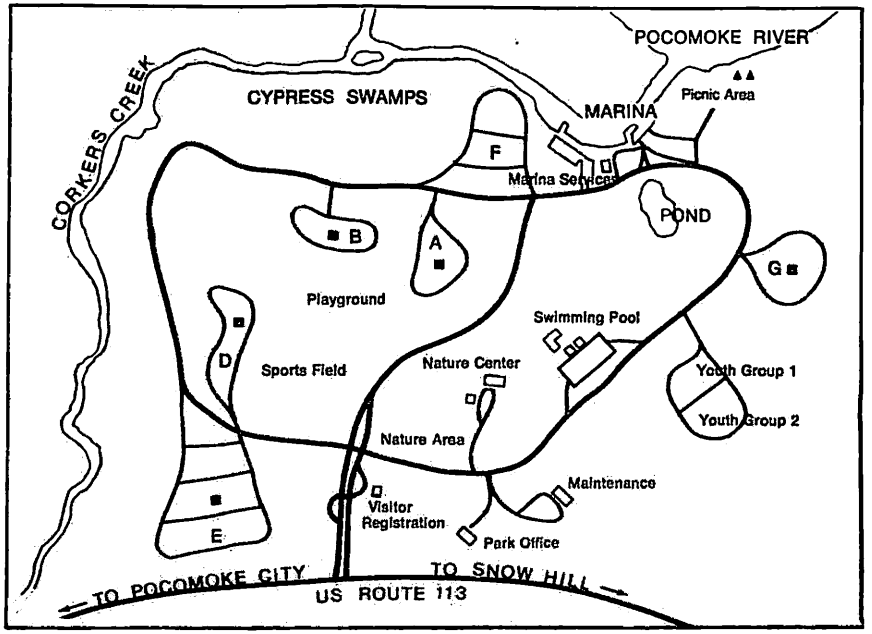
Pocomoke River State Park:

MILBURN LANDING AREA



Milburn Landing Area—Camping, picnicking, fishing, boating and interpretive programs are provided. There are fifty campsites available in a heavily wooded section of this area adjacent to the river. Family campsites as well as three youth group camping areas (each accommodating up to forty youths) are provided. Family campsites are on a first-come-first-served basis; youth group camping areas, however, can be reserved by prior arrangements with the park superintendent. Water, shower facilities and flush toilets are provided in the family camping area. The picnic areas contain picnic tables, fireplaces and pavilions (each with six tables and a fireplace). Most of the picnic areas are on a first-come-first-served basis, pavilions may be reserved in advance for a fee. Fishing is permitted in the Pocomoke River and boat launching ramps are provided for river access. Fishing licenses are required since the waters here are tidal. Scheduled nature walks and evening campfire programs are conducted periodically throughout the summer. There is also a self-guided nature trail through the cypress swamp.

SHAD LANDING AREA



Shad Landing Area—Camping, picnicking, fishing, boating, an interpretive program and swimming are offered at Shad Landing. There are six areas available for tent and trail camping. Four areas (A.B,D, G) have modern washhouses serving 30 individual sites in a loop arrangement. The lower deck of the marina services building contains the washhouse for area F. Area E has 50 sites and a heated washhouse for year-round camping. Two youth group areas are available by advance reservation and accommodate up to forty youths. Family sites have picnic tables, charcoal grills, washhouses with hot showers, flush toilets and laundry tubs. Like Milburn Landing the picnic area at Shad Landing contains picnic tables, fireplace, playground equipment and pavilions. Pavilions may be reserved in advance. In addition to fishing in the Pocomoke River and nearby creeks, a ¾ acre fishing pond is provided for youths. A marina is provided at Shad Landing which includes 23 boat slips (with water and electrical hookups), a well-lighted dock area, a fuel and transient pier; and a two-deck marina services building containing a commissary, washhouse, snack bar and seating places. Rowboats, out-board motors and canoes may be rented. A boat launching ramp is also available. A nature center at Shad Landing contains exhibits, a library, and space for meetings and other activities. Seasonal naturalists

Canoeing on Corker's Creek near Potomac State Forest.

conduct campfire programs, canoe safety sessions and canoe trips, nature workshops and nature walks, fishing contests and other activities for park visitors. A self-guiding nature trail through the cypress swamp is also offered. Outdoor education programs for children can be arranged during the school season. A 25-meter swimming pool with associated facilities such as a modern bathhouse with showers, flush toilets, lockers and dressing areas are provided. There is also a wading pool for small children. Because of depth, strong undercurrents and eddies, swimming in the Pocomoke River is not recommended. Hunting and trapping are permitted in designated areas along the river but are not allowed in the Pocomoke State Park.

Pocomoke River Wildlife Management Area—This State game management area encompasses 500 acres of land on the east side of the Pocomoke adjacent to the State forest area. This is a public hunting area and deer and puddle ducks (dabbling ducks that feed in shallow water) are abundant. These ducks can be hunted along the Pocomoke River from temporary or portable duck blinds. Permanent duck blinds are not permitted. Hunting for deer here can be difficult due to inaccessibility through the river swamps.

Camping at Shad Landing.

Recreational Needs: A canvas by the Department of Agriculture's Soil Conservation Service of recreational needs (in addition to the existing ones) as outlined in county comprehensive plans include: public or privately owned camping areas, river parks and preserves, nature study areas, roadside parks, public landings (boat launching ramps and docks with parking areas), and nature trails. In Somerset County's Comprehensive Plan, recreation facilities were rated inadequate in number for all age groups. Additionally, the State Comprehensive Outdoor Recreation Program (SCORP) identifies deficits in areas and facilities for motor boating, hunting, picnicking, walking for pleasure, and waterskiing. Additional recreation areas and facilities should be based upon SCORP policies and recommendations, be compatible with the character of the river, and be consistent with the current SCORP Action Program. (see *Maryland Outdoor Recreation and Open Space Plan).* Recommendations are made in this plan for additional recreation areas and facilities.

Public Access: Access to the middle and lower Pocomoke appears to be adequate; therefore only two additional public access points on the upper Pocomoke are recommended (Whiton Crossing and Porters Crossing)—See map on page for existing and proposed public access points.

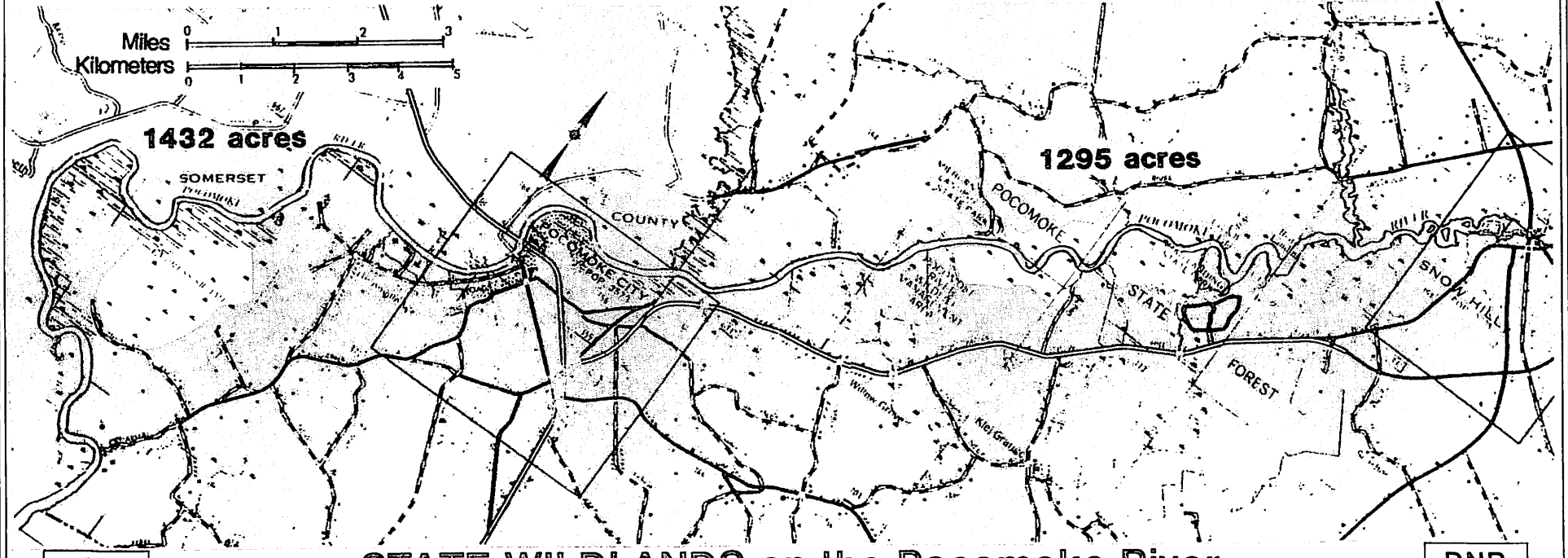
Protected Lands

State Wildlands

Wildlands in the State of Maryland are classified as type one, two, or three. Type one wildlands are primitive areas which, by their size or location, are in effect untouched by urban civilization and can offer the experience of solitude and self-reliance; type two are units of importance for all the natural sciences, especially ecology and with outstanding value for education, research, and appreciation of natural process; and type three are areas which are not of ecological or primitive stature, but which have the appearance of being in an untouched state or are capable of attaining that appearance if held and managed for this purpose. On the Pocomoke River all of the designated State Wildlands are classified as type two. These include the 1,429 acre State-owned Cypress Swamp near Rehobeth and 1,295 acres in the Pocomoke State Forest (see map on page). Preservation in the natural condition is the prevailing purpose of these holdings where activities are limited to such uses as hiking,hunting, fishing, wilderness camping and nature study.

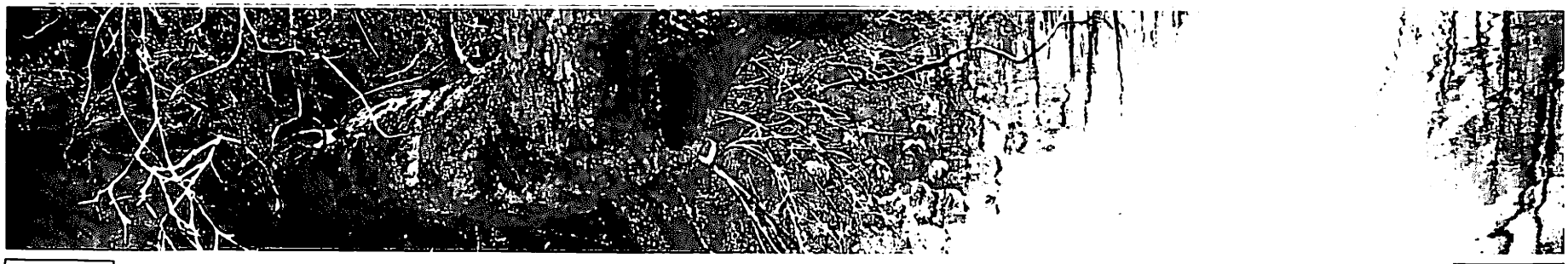
State Critical Areas (refer to map on pages 6 & 7)

As required by state legislation the Secretary of State Planning identifies and designates areas of critical State concern after consultation with local governments. These areas contain valuable natural resources or have one or more features..."which contribute substantially to or have a substantial effect upon the social, ecomonic, or enviornmental welfare of the citizens of the State...[and] because of [their] inherent characteristics or vital location [are] *susceptible* to physical alteration, destruction, or loss..." (COMAR 16.00.02.08. A, B [1] [2]). Because of its attributes, the Pocomoke River from bank to bank, plus all adjacent lands with soil classified in the USDA Soil Conservation Service's soil surveys for Maryland counties as muck, muck and peat, mixed alluvial, and tidal marsh, has been designated an area of critical State concern. Designation does not, however, extend past a point one-half (½) miles from the junction of any tributary with the banks of the Pocomoke River, and in the corporate limits of Snow Hill and Pocomoke City includes only those lands within the 100-year floodplain as identified on the Flood Insurance Rate Maps effective May 15, 1980 and September 3, 1980 respectively (Areas of Critical State Concern: Designation Report, 1981). The purpose of critical area designation is to insure that the future use of the river is accomplished in a manner which is most compatible with its attributes.



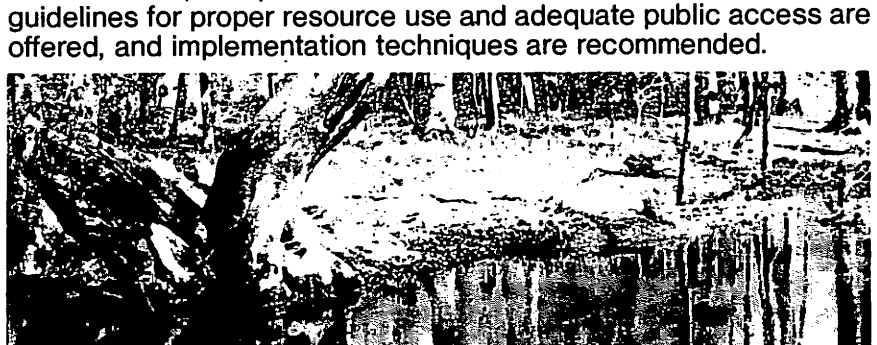
STATE WILDLANDS on the Pocomoke River

SECTION II — Resource Use and Protection Plan



The Pocomoke River is the only river on the Delmarva Peninsula designated under the Scenic and Wild Rivers Act of Maryland. The river is also eligible for study by the Federal Government for inclusion in their Wild, Scenic and Recreation Rivers System. Additionally, the swamps adjacent to the river in all three counties have been recommended for potential nomination to the National Natural Landmarks Program.

The resources that led to the designation of the Pocomoke as a Maryland Scenic River are clearly outlined in the preceeding section. Such practices as clear-cutting to the water's edge, channelization, and pollution of the water negatively impact the resources that contribute to the scenic appeal of the river. It is therefore necessary to plan for the wise use of the river's resources by suggesting compatible land and water uses. The multiple usage of resources already occurring in the Pocomoke River basin suggests that this comprehensive management plan is the only reasonable approach to insure that wise management of the river's scenic resources will be accomplished. Here scenic and wild river objectives for the Pocomoke are set, the planning area is defined, the river is divided into segments and classified, the qualifications used for classification are outlined, guidelines for proper resource use and adequate public access are offered, and implementation techniques are recommended.



Objectives

In order to assure its preservation as a wild and scenic river, the Pocomoke should be managed to:

Protect the river's outstanding scenic qualities;

Maintain and enhance the outstanding biological and ecological resources of the river corridor;

Maintain and/or improve the existing water quality;

Maintain the free-flowing condition of the water;

Promote compatible land use;

Provide for recreation which is compatible with scenic and wild river designation and natural resources of the area;

Preserve and/or interpret the archaeological historical and cultural features within the river corridor; and

Conserve agricultural lands.

Scenic River Planning Area

Primary planning focus will be upon the scenic corridor because the corridor provides the greatest impact upon the future of the waterway as a scenic resource. The scenic corridor includes the wetlands adjacent to the river plus other adjacent lands with unique, natural, or scenic resources. These lands are to be managed for maximum maintenance of the intergrity of the river and the enhancement of its biological, ecological, and recreational values.

Classification

Based upon their attributes, entire rivers or river segments are usually classified as wild, scenic, or recreational. Generally, qualifications for river classification are as follows:

Wild River

a. River must be free-flowing.

b. Water quality should be supportive of local fish and wildlife populations.

c. Shorelines should be essentially primitive, free of man-made intrusions, including waterway modifications and should be natural-like in appearance.

d. River must be generally inaccessible by road.

Scenic River

a. Water is free-flowing. Low dams, diversion works, or other structures should not be located in the scenic river area; upstream impoundment construction is contingent upon adverse impact.

b. Water quality is (or is capable of being improved so that it is) supportive of local fish and wildlife populations.

c. Developments and small communities are limited to short stretches.

d. Accessible generally by roads or an occasional bridge. Short stretches of conspicuous or longer stretches of paralleling and inconspicuous roads or railroads are permitted.

e. Shoreline is essentially natural-like in appearance; however, some agricultural land and a modest amount of waterway modification may occur.

Recreational River (Modified Scenic)

a. River is not necessarily free-flowing; there may be dams or small impoundments.

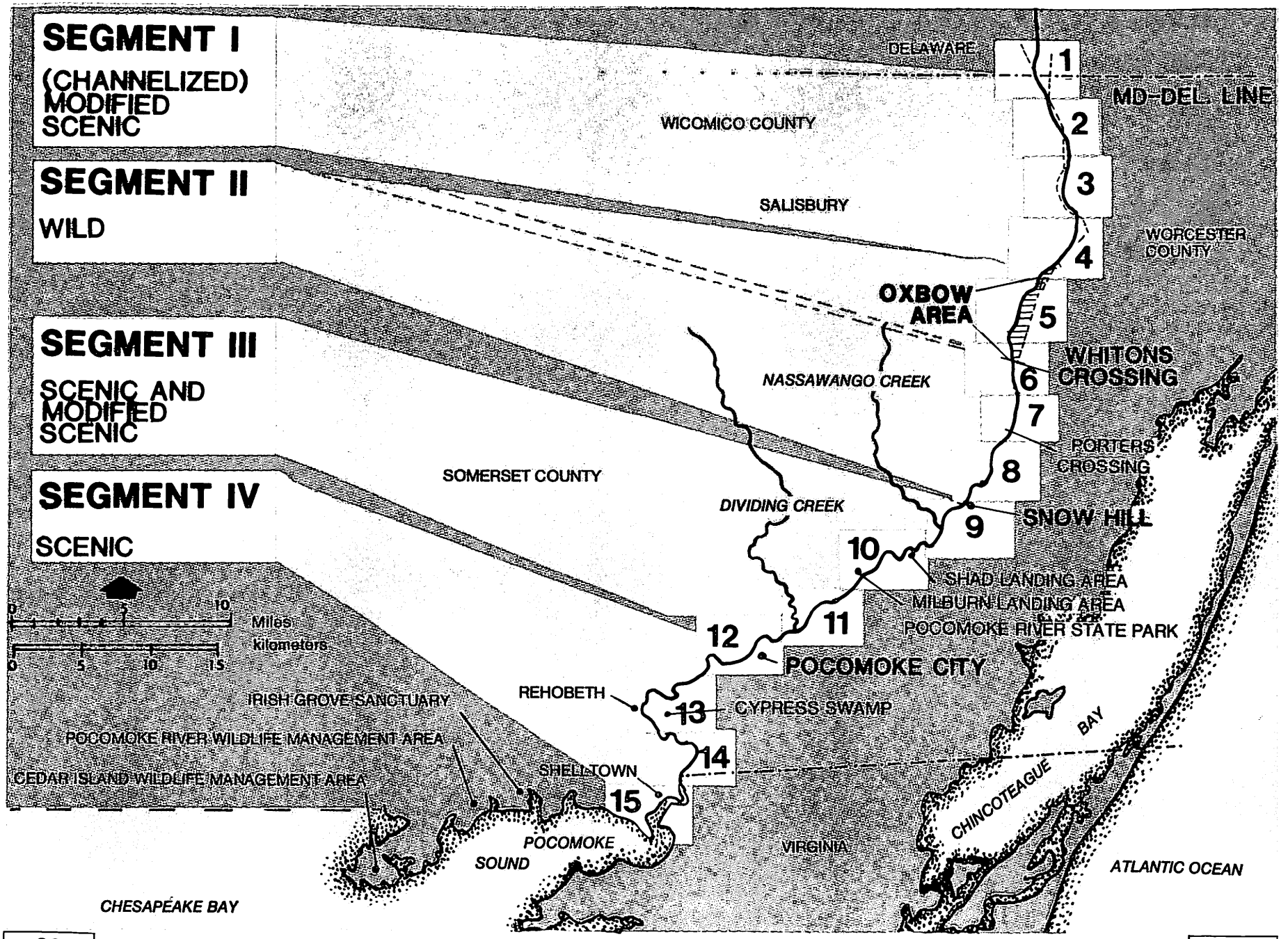
b. Water quality should be capable of supporting local or stocked species of fish and wildlife.

c. Shorelines may be extensively developed. Land may be developed for the full range of agricultural uses including small residential developments. Combinations of paralleling roads or railroads, bridge crossings, and river access points are permissible.

Based upon the preceding qualifications the Pocomoke River has been divided into segments and classified as follows:

I.	**Maryland-Delaware Line to one mile below Whitons Crossing**	**Modified Scenic**
II.	**One mile below Whitons Crossing to Snow hill**	**Wild**
III.	**Snow Hill to Pocomoke City**	**Scenic and Modified Scenic (Modified scenic includes the two cities and outlying areas)**
IV.	**Pocomoke City to Pocomoke Sound**	**Scenic**

POCOMOKE RIVER: MAP LAYOUT, CLASSIFICATION AND SEGMENT DESIGNATIONS



Resource-Use Recommendations

Three major types of resource use recommendations are appropriate within the river corridor: general, classification-related, and segment-related. Each set of recommendations is designed to guide land and water use decisions toward achievement of the wild and scenic river objectives. General resource use recommendations apply throughout the river corridor and operate as the basic ground rules for resource protection and use. Classification-related recommendations offer guides for maintaining the natural character of the particular Wild, Scenic and Modified Scenic segments, while segment-related recommendations serve as tools for strictly regulating use in a specific defined area. It is intended that this complex of resource use recommendations supplement rather than conflict with each other. In cases where conflicts or inconsistencies arise, the more protective recommendation should govern.

I. GENERAL RECOMMENDATIONS

General recommendations emphasize maintaining the corridor's natural character while at the same time recognizing the need to accommodate compatible uses of resources.

A. WATER QUALITY* AND FLOW

(1) For scenic appeal, surface waters should be maintained free of floating debris, oil, scum, or other materials which detract from scenic appeal; materials that will settle to form objectionable deposits; substances producing objectionable odor, taste or turbidity; materials, alone or combined, in concentration which are toxic to humans, animals, plants or aquatic life; substances alone or in combinations that produce undesirable aquatic life.

(2) Surface waters, with few exceptions, should be of a quality to allow enjoyment or recreational activities based upon the utilization of fish, waterfowl and wildlife.

(3) Species harvested by recreation users should be fit for human consumption.

*From: Report of the National Technical Advisory Committee to the Secretary of the Interior, 1968.

(4) Discharge of substances which increases unfavorable total acidity or alkalinity should be limited.

(5) The water quality should be maintained and enhanced by supporting water quality standards set by the "208 Plan" for the Pocomoke River.

(6) The natural flow volume of the river should be maintained.

B. FISH AND WILDLIFE—fish and wildlife have commercial, recreational as well as aesthetic value and should be treated as a multi-use resource.

(1) Utilization of fish and wildlife resources for commercial purposes should not preclude their use as a scenic or recreational resource.

(2) Wherever necessary, provide and maintain fish passage facilities.

(3) Whenever possible, incorporate in land management techniques practices which will contribute toward enhancing wildlife populations.

(4) Preserve and enhance unique wildlife habitats.

(5) Protect unique, rare, threatened, and endangered species by encouraging the pursuit of a vigorous habitat management and protection program.

(6) Encourage greater public awareness of fish and wildlife resources through continuing educational programs.

(7) Seek cooperative hunting areas.

(8) Maintain the fish and wildlife resources—where species decline is evident and can be corrected, every effort should be made to do so.

(9) Where habitat management practices are a limiting factor in species propagation, provisions should be enacted to correct the inadequacy.

C. STRUCTURES

(1) Essential public utility service lines and structures should be constructed and situated in a manner which minimizes their visibility from the river and their secondary impact due to run-off.

(2) Structures for fishery management purposes such as fish ladders should not materially alter the natural character of the river.

(3) Foot bridges should be made of naturally occurring materials such as wood.

(4) Temporary structures, such as duck blinds, should not impede the natural flow of the river nor have a negative impact on the environment.

(5) New permanent structures (such as a dam) which impede the natural flow of the river should be discouraged.

(6) Structures within the 100-year flood plain should be restricted and other permanent structures should be set back a reasonable distance from the river.

(7) No structures should be located on soils which have been identified in County Soil Surveys as unsuitable for building purposes.

(8) Structures visible from the river, trails, or developed recreation sites should have sufficient vegetative screening to make them as inconspicuous as possible.

D. FORESTRY PRACTICES—forestry management practices should follow the following guidelines:

(1) Species diversity within the scenic corridor should be maintained.

(2) Rare or threatened species habitat should be protected from destructive logging operations.

(3) Logging operations should comply with the scenic corridor concept.

(4) Clear-cutting should be kept a reasonable distance from the river.

(5) Logging debris should be kept from entering the watercourse.

(6) Logging equipment should be screened from view from the river.

(7) Logging in unique natural areas should be discouraged.

E. PUBLIC ACCESS

(1) All new public roads which parallel the river should be located outside the scenic corridor.

(2) New hiking trails that parallel the river should be situated in a manner which is compatible with the scenic character of the river.

(3) New parking areas should be located, with few exceptions (Porters and Whiton Crossings) outside the scenic corridor.

(4) New public roads for river access may be provided where needed but should not be established within 5 miles of an existing access road or in the wild section of the river.

(5) The above excludes temporary logging and maintenance roads.

F. RECREATION

(1) Trails, bike paths and scenic roads should link parklands, conservation areas, scenic landscapes and historic and cultural areas.

(2) An interpretive brochure which points out the scenic nature of the river should be developed.

(3) One-hundred year flood plains, wetlands, and other unique natural areas should remain as open space areas.

(4) Buffers should be maintained between public lands used for recreation and private lands.

(5) Public campsites should be screened from view along the waterway.

(6) Different types of recreation use and their impacts on the natural resources of river character should be monitored.

(7) When necessary total visitor use should be regulated to avoid negative environmental impacts.

G. DREDGING, FILLING AND OTHER EARTH MOVING ACTIVITIES.

(1) No surface mining should occur in the scenic corridor

(2) Altering marsh hydrology by dredging and filling should be avoided.

(3) With the exception of approved agricultural drainage projects, avoid excavation of materials and other earth disturbing activities within the scenic corridor.

(4) All earth moving activities should be done in a manner which will not destroy the natural character of the river corridor.

(5) In any earth moving operation adjacent to the river, erosion and sedimentation guidelines should be carefully followed.

(6) Channel modification work will not be undertaken without prior review by the appropriate State agencies or without written approval of the Secretary of Natural Resources.

(7) In the event that river banks are disturbed by earth moving operations they should be revegetated as soon as the operation ceases.

H. OTHER RECOMMENDATIONS

(1) **Existing land uses**—existing land uses not mentioned above should be maintained at present level. Existing structures which detract from the natural character of the river should be screened from view. Dilapidated or deteriorating structures in full view from the river should be removed.

(2) **Signs**—only those signs, which are necessary for public welfare and/or safety, or for location or interpretation should remain in full view from the river.

(3) **Waste disposal dumps**—all waste disposal dumps should be located away from the river its flood plain.

(4) **Livestock**—where erosion and water pollution is evident, farmers should be encouraged to fence livestock away from the river.

Classification-Related Recommendations*

The river was divided into segments based upon use patterns. The segments were then classified as wild, scenic or modified scenic. The intent of each classification was to describe the relative primitiveness or naturalness of that portion of the scenic corridor. In order to maintain the existing character of that segment, recommendations are made for each classification. Suggested use densities or intensities would be light within the wild segments, light to moderate in the scenic segment, and moderate to heavy in the modified scenic segment. These classification-related recommendations are tailored to more precisely fit the differing requirements along the river's length.

Segment-Related Recommendations*

For each segment, recommendations are based primarily upon how that segment is classified. To extract the segment-related recommendations, parameters for each segment were placed on transparent maps and overlaid. Parameters included land ownership and land use, location of archaeological sites, location of existing roads and trails, location of feeder streams, ditches or channelized areas, fish spawning areas by types, location of endangered species habitat and extention ranges, geology and natural soil groups, vegetation (types), and location of the 100-year flood plain. From these an analysis map was compiled to determine the affects (if any) of one parameter on the other. Some of the parameters were checked against recent aerial photographs. If there were inconsistencies the item was field checked and corrected. In this way, finite segment recommendations were extracted.

*Note—HOW TO INTERPRET THE RECOMMENDATIONS—Segment-related recommendations should be interpreted to mean immediate implementable recommendations on the existing resource uses while classification-related recommendations are guidelines to be used for approved present use or probable unforeseeable future uses.

Resource Analysis
SEGMENT I (Modified Scenic)

Maryland Delaware Line to approximately One Mile South of Whiton Crossing, limit of tidal influence 14.4 miles—this segment of the Pocomoke includes approximately 2,250 acres of wooded swamp bordering the river as it flows south from Delaware to Whitons Crossing. The river in this area is a 14.4 mile straight ditch or channel flanked by two spoil banks.

Originally the river meandered over seventeen miles but the channel or Great Ditch, as it is called, reduced this stretch of the river to its present length leaving several cutoffs known as oxbows. Prior to channelization, the existing meander of the old river bed was much as it exists today. The two oxbow meanders in the Whiton Crossing area were quite well-defined. The most striking feature at that time was the dense and mature timber across the entire area below Whiton Crossing. Tree cover was uniform to the river's edge. Below the southernmost oxbow the river disappeared under the tree canopy then reappeared as a river-bed channel. By 1948, ten years after channelization, impounding was evident at the base of the channelized stream and at the oxbow. There was a rapid die-back of saplings and notable changes in the stream meanders well downstream towards Porter's Crossing with beginning evidence of a braiding stream as indicated by rapid change in tree condition. There was clear indication of floristic change along the natural meander and to a lesser degree east of the channalized stream by 1958. A shrub swamp with isolated cypress scattered throughout now reached at least halfway up the old river meander from the terminus of the channelized stream. A definite interlacing network of channels (braided stream) had established below the channelized stream. Some patches of duckweed appeared in the natural river meander by 1972. Duckweed and some shrub-like vegetation was very dense in the isolated river meander. Between 1958 and 1972 only minor changes occurred in the shrub swamp.

A waste weir (debris dam) has established itself at the end of the channelized area. This plus the spoil banks has caused water levels to back up in Ninepin Branch, Duncan Ditch, Whiton Ditch and Tilghman Race. This high water level behind the weir, is slowly increasing the shrub swamp. Review of available hydrological surveys was carried out by SCS to determine the degree of impounding actually occurring above the weir area.

The channelized stream is isolated from the old river bed and is quite different in character. The spoilbanks are well-established with trees such as red maple, sweetgum, swamp cottonwood, river birch, and sycamore of small diameter. These spoilbanks obstruct the view of the surrounding swamps from the river. The river carries a heavy load of suspended sediments which can be seen entering the river from inflowing agricultural drainage ditches. There are at least five major watersheds in this area served by the channel. Some of the steep banks immediately adjacent to the water support little vegetation so that erosion is occurring from the spoilbank.

the lateral floodplain areas. The shrub swamp created along the old river bed is a wood-duck nesting and feeding area and is of moderate use by puddle ducks on a year-round basis for reproduction, roosting and feeding. Furbearers including raccoon, otter, muskrat, opossum, skunk, and fox utilize the area. Birds are the most notable wildlife in the swamp; great blue herons, kingfishers, woodpeckers, various warblers, owls and hawks are frequently observed. The endangered bald eagle and Delmarva fox squirrel as well as the carpenter frog—a species of special interest, utilize this area. Largemouth bass, black crappie, herring, hickory shad and yellow perch, to name a few, are found in the area's water.

This area remains mostly undeveloped except for the small towns of Willards, Whaleyville, and Powellville. There are several road crossings (two are major highways) and one railroad crossing. Thirteen archaeological sites are located near the river in this segment. Land use is mainly agricultural and forest under private ownership. Selective cutting has occurred immediately north of Whiton crossing. Recreational activities include mostly hunting and nature study. This area is zoned Open Space, and there is little development pressure at this time.

NOTE: Because the oxbows are geographically located in this segment they are described here, but because of their wild character they are hereafter treated as part of segment II (Wild).

Classification-Related Recommendations

suggested recreational uses and activities

tent and trail camping

public parking areas

boating (all types) with launching ramps and docks

family and group picnicking

visitors center

nature center

hunting and fishing cabins or lodges

developed public parks and recreation centers with convenient facilities

non-recreational uses

agricultural—including farmsteads and agricultural structures forestry—following general policy guidelines.

moderate intensity developments with buffer zones

limited number of commercial sites

dams or other structures, where absolutely necessary, continuation and maintenance of existing dams or other water control structures

bridges for motorized travel or expansion of existing bridges

new roads and trails for public access to the river

Segment-Related Recommendations

Preserve and protect carpenter frog ponds as well as endangered species habitats

Monitor pollution loadings from channelized segment in Delaware

Promote the use of channel maintenance roads for hiking and biking trails

Protect fish spawning areas

Establish animal waste lagoons where needed

Protect archaeological sites through conservation easements or purchase

Improve present boat launch ramp and stabilize roadside parking at Whiton Crossing Bridge

Develop multiple-use area at Ninepin Branch

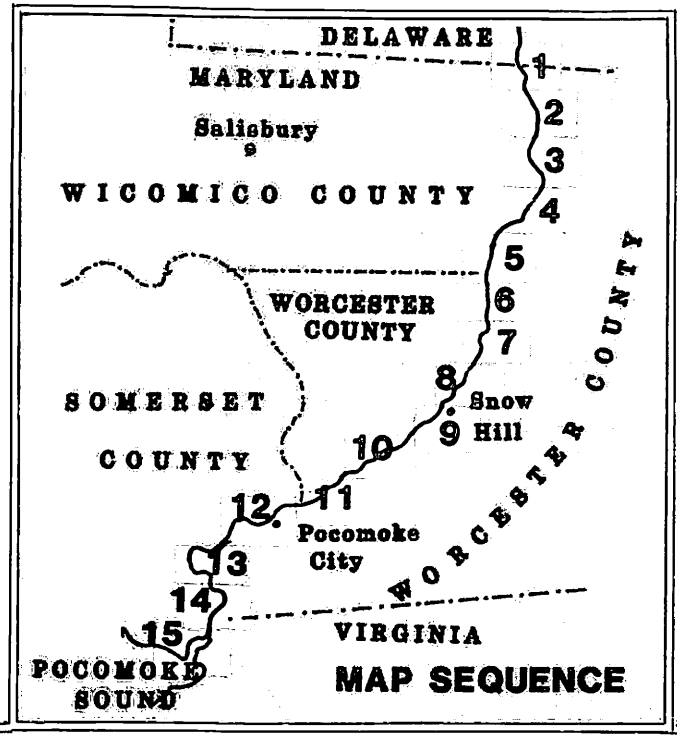
Maintain vegetation buffers between the river and channel maintenance roads

Continue existing clearing and snagging operations as means of preventing clogging of channel

Establish and maintain vegetation buffers wherever erosion is evident or probable

POCOMOKE RIVER MAP SERIES

Scale 1"= 2000'



LIST OF MARYLAND HISTORICAL TRUST—HISTORIC SITES INVENTORY LOCATED WITHIN THE POCOMOKE SCENIC STUDY MAPPING AREA

*

(W) Worcester County
(S) Somerset County

Reference Number	Located On Map #
1-Douglas Doty House (W)	3
2-Arthur Cozzen's House (W)	3
3-Victor Filator House (W)	3
4-Douglas Carmean Brick Ruin (W)	8
5-Old Alms House (W)	8
6-A Number of Old Houses in Snow Hill (W)	9
7-"Shore Acres" (W)	11
8-Puncheon Mill (S)	12
9-"Ivy Hall"-"Costen" (S)	12
10-"Winter Quarter"-"Cowley" (W)	12
11-Rehobeth Episcopal Church (S)	13
12-Rehobeth Presbyterian Church (S)	13
13-Vessey's Orchard (S)	13
14-"Beverly" (W)	14
15-Sidney McKay Property (W)	14
16-William Point Farm (S)	15

LEGEND

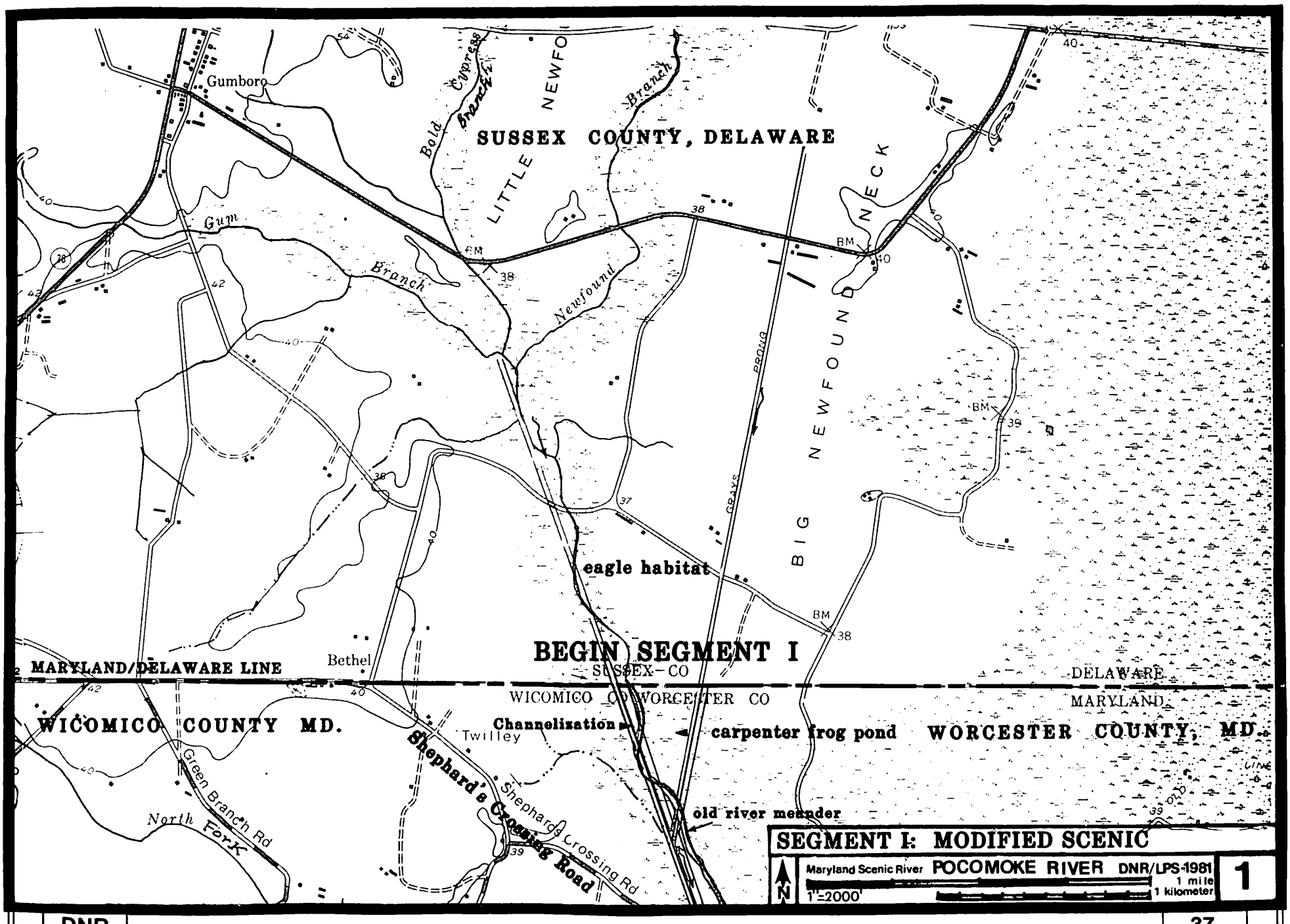
DESIGNATES SWAMP, MARSH, OR WETLAND

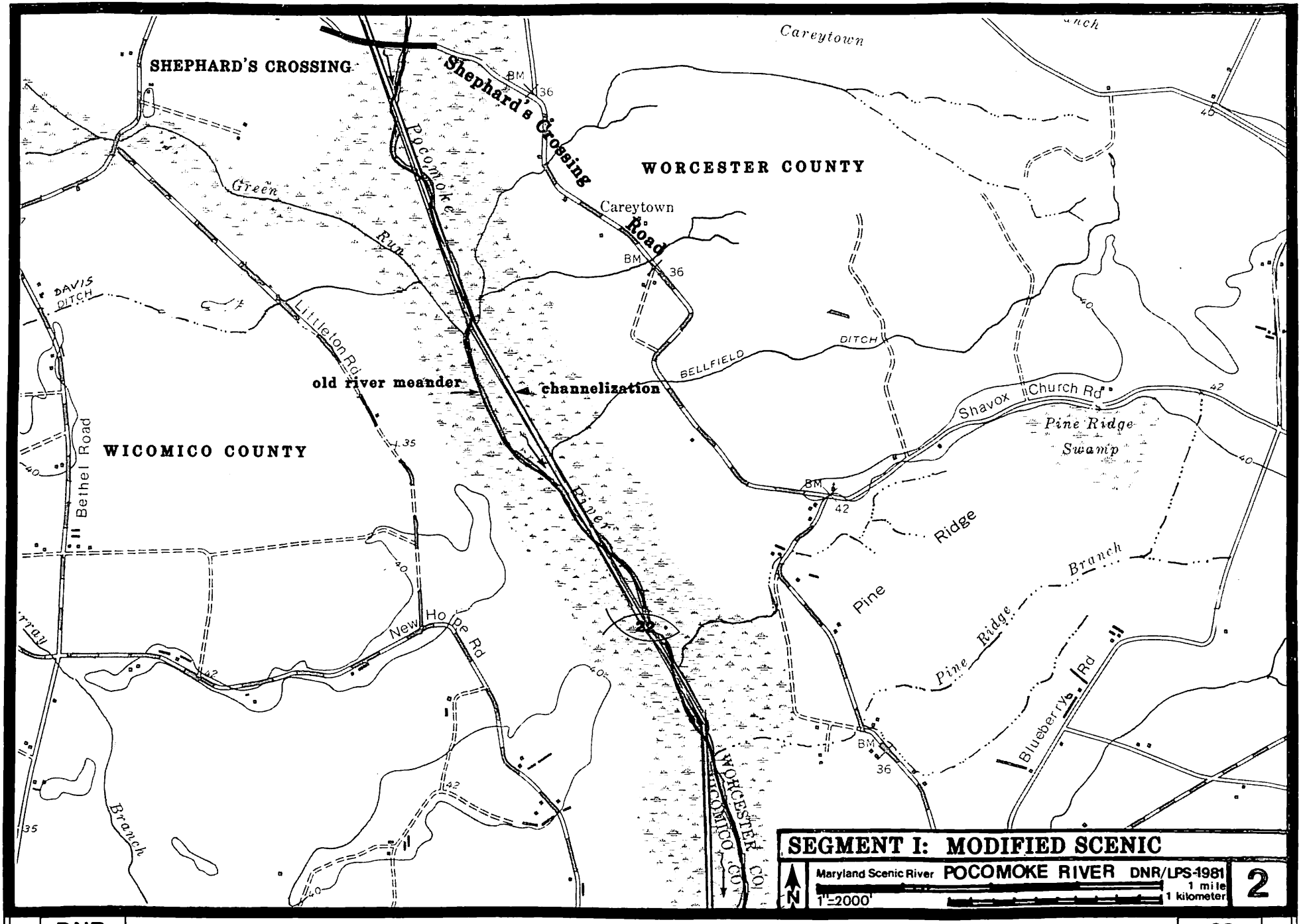
REFER TO FISH SPECIES CHART ON PAGE 22 — 22

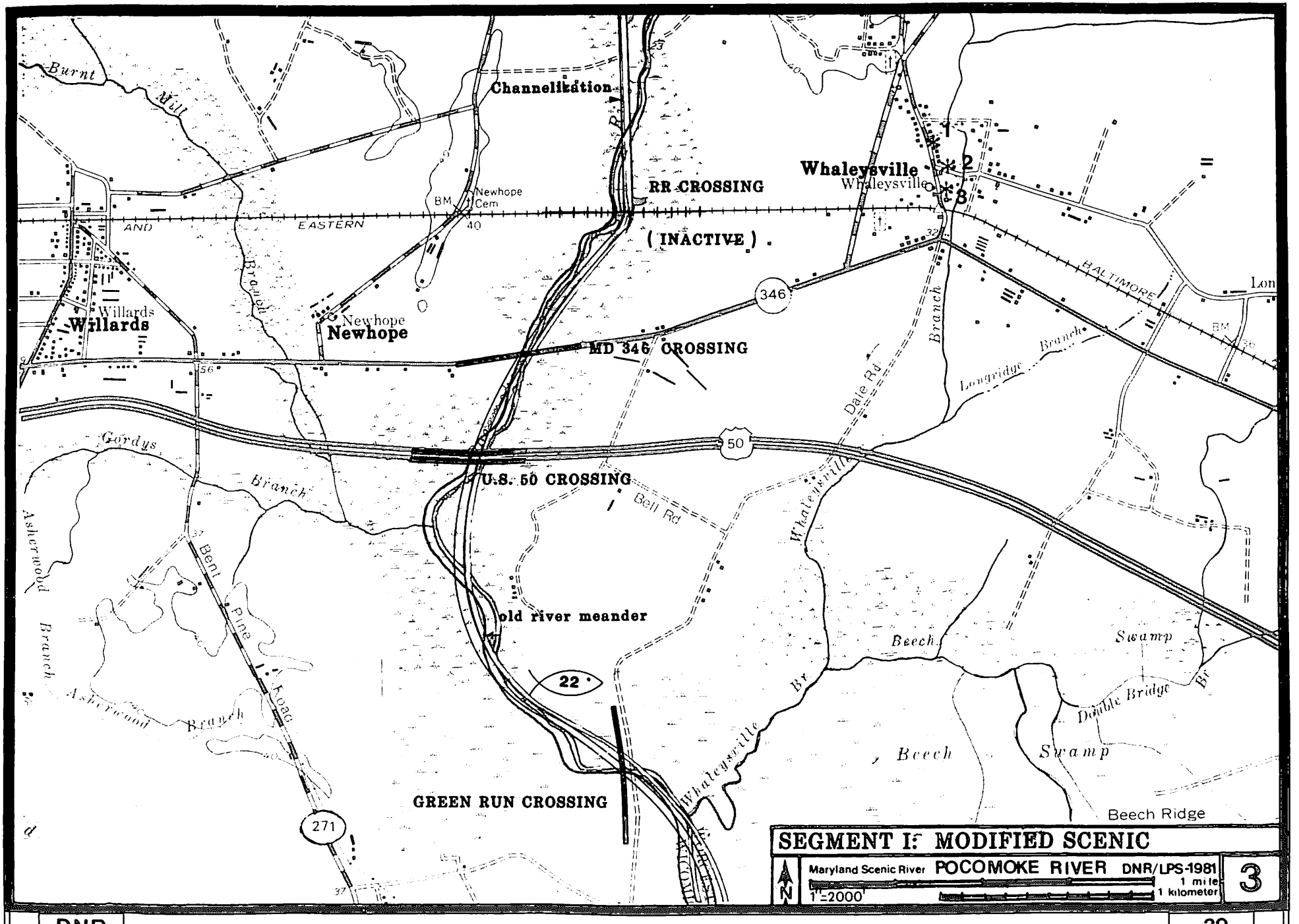
LISTED ON MARYLAND HISTORIC SITE INVENTORY — *

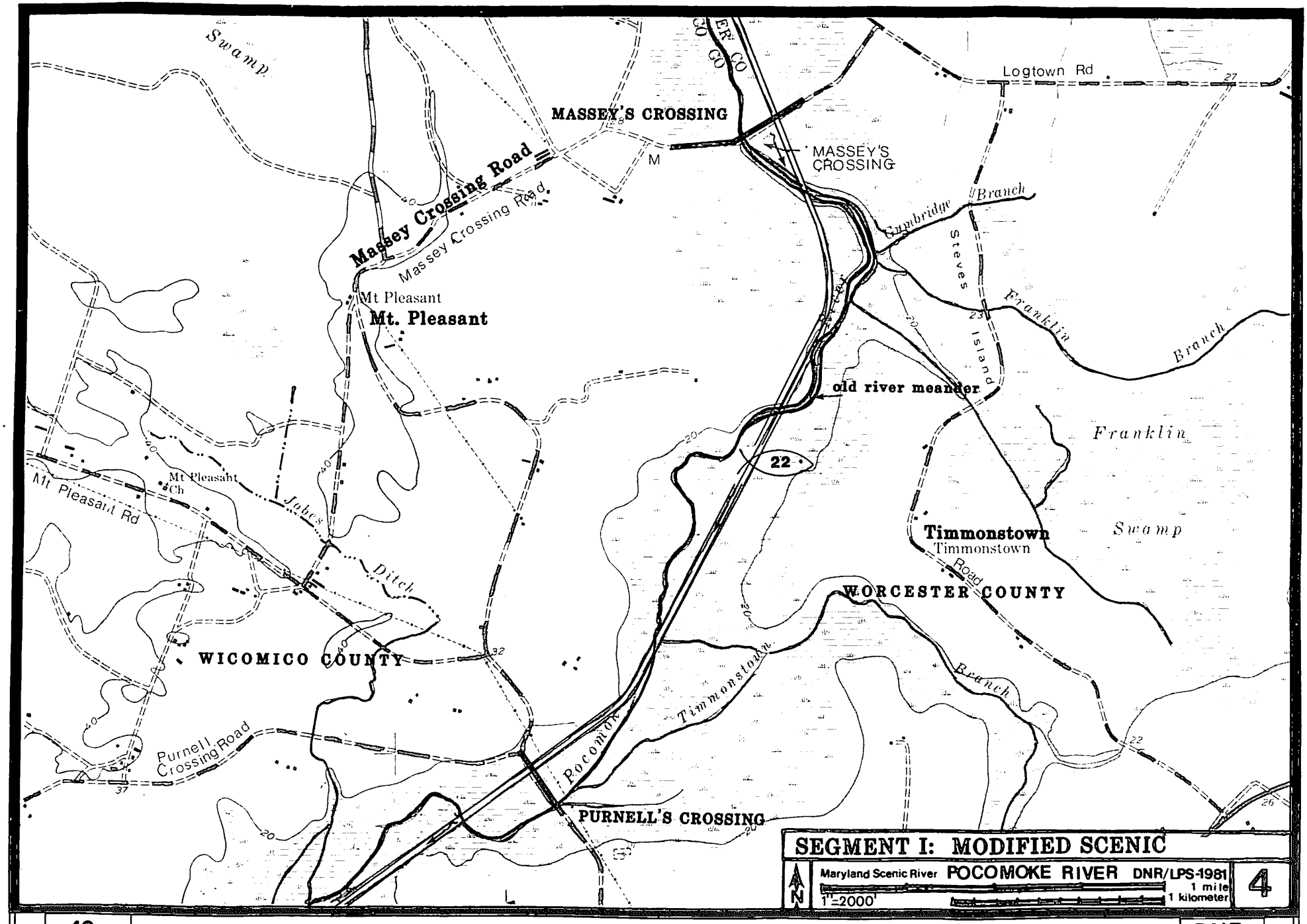
Recreational Use Symbols

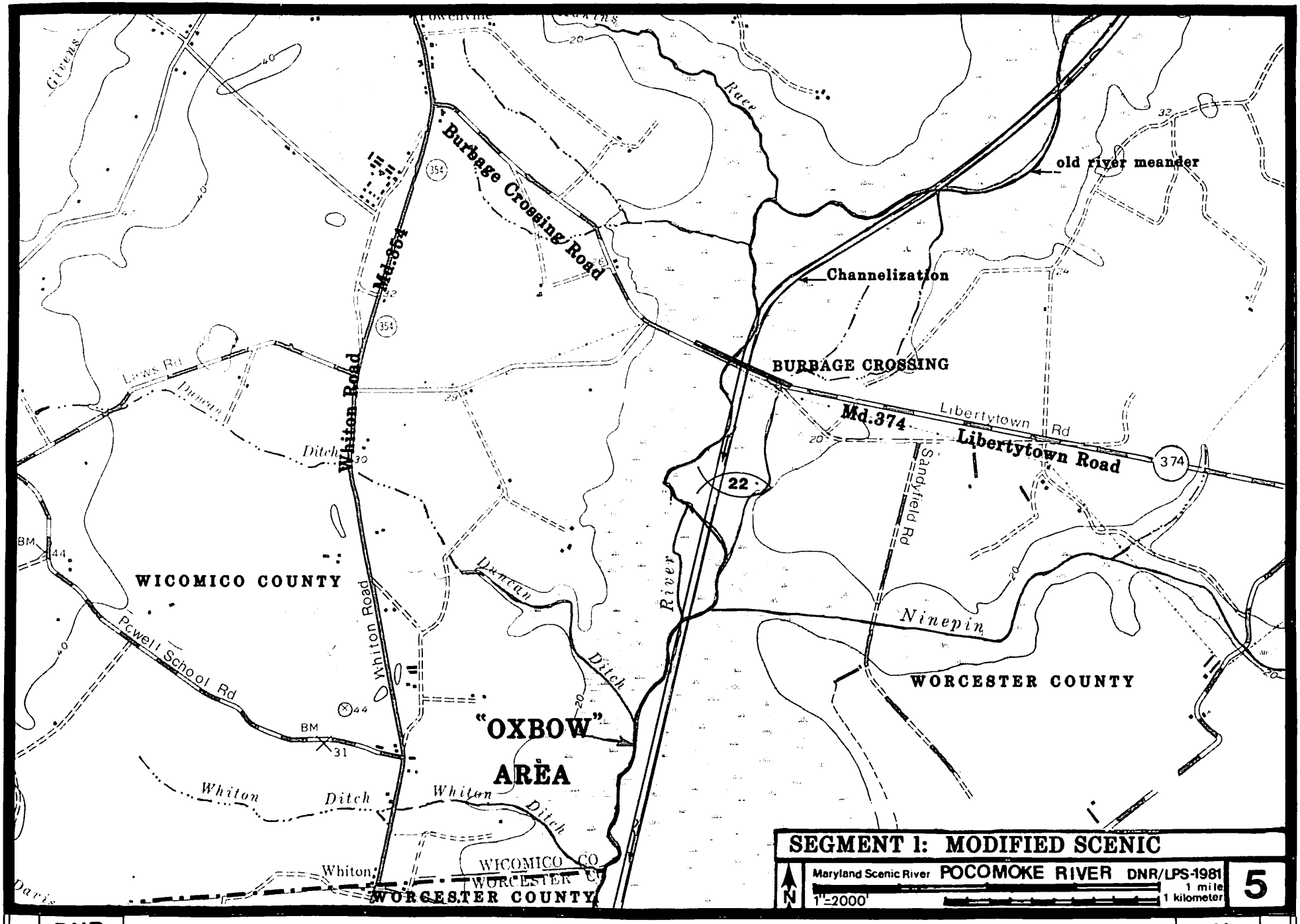
- BOAT LAUNCHING RAMPS
- PICNICKING, PICNIC TABLES
- CAMPING, TENT
- SWIMMING
- HIKING
- DRINKING WATER
- SHOWER, WASHHOUSES
- MEN'S TOILETS
- WOMEN'S TOILETS
- PAVILIONS (W/TABLES)
- PLAYGROUND EQUIPMENT
- PAVILIONS MARINA
- SNACK BAR
- ROWBOAT RENTAL
- CANOE RENTAL
- TELEPHONES
- PARKING
- TRAILER PARKING
- FACILITIES FOR HANDICAPPED
- CAMPFIRES
- BOATING, OUT-BOARD MOTORS
- HUNTING, TRAPPING
- FISHING
- EXHIBITS, INTERPRETIVE PROGRAMS
- COMMISSARY


SUSSEX COUNTY, DELAWARE
Gumboro
Bald Cypress Branch
LITTLE NEWFO
Branch
Gum Branch
Newfound
BIG NEWFOUND NECK
GRAYS PRONG
eagle habitat
BEGIN SEGMENT I
SUSSEX CO
WICOMICO CO
WORCESTER CO
DELAWARE
MARYLAND
MARYLAND/DELAWARE LINE
Bethel
WICOMICO COUNTY MD.
WORCESTER COUNTY, MD.
Channelization
carpenter frog pond
Twilley
Shepherd's Crossing Road
Shepherds Crossing Rd
Green Branch Rd
North Fork
old river meander
SEGMENT I: MODIFIED SCENIC
Maryland Scenic River
POCOMOKE RIVER
DNR/LPS-1981
1 mile
1 kilometer
1"=2000'
N
1

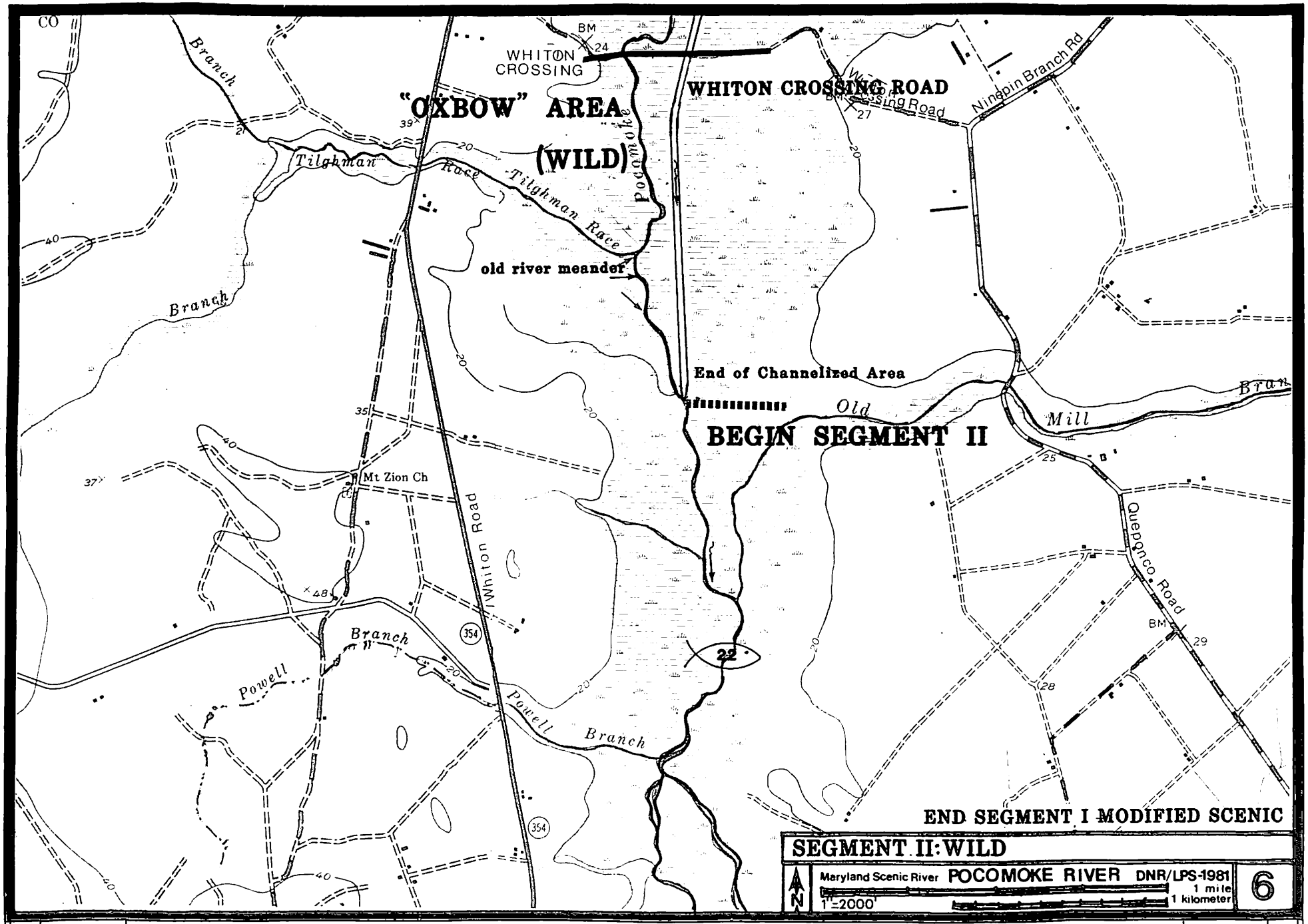

SHEPHARD'S CROSSING
Shephard's Crossing Road
Careytown
WORCESTER COUNTY
Careytown
Pocomoke
Green Run
DAVIS DITCH
Littleton Rd
old river meander
channelization
BELLFIELD DITCH
Shavox Church Rd
Pine Ridge Swamp
WICOMICO COUNTY
Bethel Road
River
Pine Ridge
Pine Ridge Branch
New Hope Rd
Blueberry Rd
Branch
WORCESTER CO
WICOMICO CO
BM 36
BM 42
SEGMENT I: MODIFIED SCENIC
Maryland Scenic River POCOMOKE RIVER DNR/LPS-1981
1 mile
1 kilometer
1"=2000'
N
2


Burnt Mill Branch
Channelization
RR CROSSING
(INACTIVE)
Whaleysville
Whaleysville
Newhope Cem
BM
AND EASTERN
Willards
Willards
Newhope
Newhope
MD 346 CROSSING
346
Gordys Branch
U.S. 50 CROSSING
50
Bell Rd
Dale Rd
Whaleyville Br
Longridge Branch
BALTIMORE
Asherwood Branch
Bent Pine Road
old river meander
22
Beech Swamp
Double Bridge Br
GREEN RUN CROSSING
271
Beech Ridge
SEGMENT I: MODIFIED SCENIC
Maryland Scenic River POCOMOKE RIVER DNR/LPS-1981
1"=2000'
1 mile
1 kilometer
3


Swamp
MASSEY'S CROSSING
Logtown Rd
MASSEY'S CROSSING
Massey Crossing Road
Massey Crossing Road
Mt Pleasant
Mt. Pleasant
Cambridge Branch
Steves Island
Franklin Branch
old river meander
Franklin Swamp
22
Mt Pleasant Ch
Mt Pleasant Rd
Jobes Ditch
Timmonstown
Timmonstown Road
WORCESTER COUNTY
WICOMICO COUNTY
Timmonstown Branch
Purnell Crossing Road
Pocomoke
PURNELL'S CROSSING
SEGMENT I: MODIFIED SCENIC
Maryland Scenic River POCOMOKE RIVER DNR/LPS-1981
1"=2000'
1 mile
1 kilometer
4



Burbage Crossing Road
Md.354
Whiton Road
old river meander
Channelization
BURBAGE CROSSING
Md.374
Libertytown Road
Libertytown Rd
Sandyfield Rd
22
374
354
Laws Rd
Duncan
Ditch
WICOMICO COUNTY
Pcwell School Rd
Whiton Road
Duncan
Ditch
River
Ninepin
WORCESTER COUNTY
"OXBOW" AREA
Whiton
Ditch
Whiton
Ditch
Whiton
WICOMICO CO
WORCESTER CO
WORCESTER COUNTY
Givens
Race
Davis
BM
44
31
SEGMENT 1: MODIFIED SCENIC
Maryland Scenic River
POCOMOKE RIVER
DNR/LPS-1981
1 mile
1 kilometer
1"=2000'
N
5



WHITON CROSSING
"OXBOW" AREA
(WILD)
WHITON CROSSING ROAD
Ninepin Branch Rd
Tilghman Race
Tilghman Race
Pocomoke
old river meander
End of Channelized Area
BEGIN SEGMENT II
Old Mill Bran
Mt Zion Ch
Whiton Road
Quepanco Road
Branch
Powell Branch
Powell Branch
354
22
END SEGMENT I MODIFIED SCENIC
SEGMENT II: WILD
Maryland Scenic River
POCOMOKE RIVER
DNR/LPS-1981
1 mile
1 kilometer
1"=2000'
N
6

Resource Analysis SEGMENT II (Wild)

One mile south of Whiton Crossing to Snow Hill (8 miles)—the river begins to narrow and wind with a dense southern overflow forest close to the water's edge. Because no major roads (except Porters Crossing) and only one powerline intersect the river in this area, it exhibits a wild character with little evidence of human intrusion. In places along the river the lily pads, duckweed, and pickerelweed are backed by tall cypress and oaks. these old-growth trees with vines up to six inches thick create a wilderness-like atmosphere. Wilderness canoeing can be excellent in this area. In addition to its recreational value, this area supports seasonal waterfowl concentrations, and a variety of other wildlife, including an array of songbirds. The area historically has been a significant spawning area for white perch, alewife and shad. there are three archaeological sites, one powerline crossing and two unimproved roads up to the water's edge in the area. Soils immediately adjacent to the flood plain are suitable for development and farming with only slight limitations. At present the surrounding areas are predominantly cropland. Thirty-two acres of land at Porters Crossing are in public ownership. Zoning for the area is Open Space. Problems include flooding, trees susceptible to windthrow, and moderate development pressure in the lower reaches near Snow Hill.

Classification-Related Recommendations

suggested recreational activities:

primitive hiking and camping

hunting and fishing

canoeing

nature study

other forms of passive recreation which are consistent with the wild character of this segment

non-recreational uses:

conservation of the land in its existing condition

agriculture—following general policy guidelines

forestry—following general policy guidelines

all other uses are not recommended for the wild river segment

Segment-Related Recommendations

Provide limited recreation facilities at Porters Crossing—extensive recreational development is not recommended due to extensive flooding in the area

Discourage new structures or improvements unless they are clearly in keeping with the overall management and classification objectives of the wild river environment

Discourage additional utility crossings

Seek scenic easements from, or conservation agreements with, land owners bordering the River in this area especially in the Whiton Ox-bow area

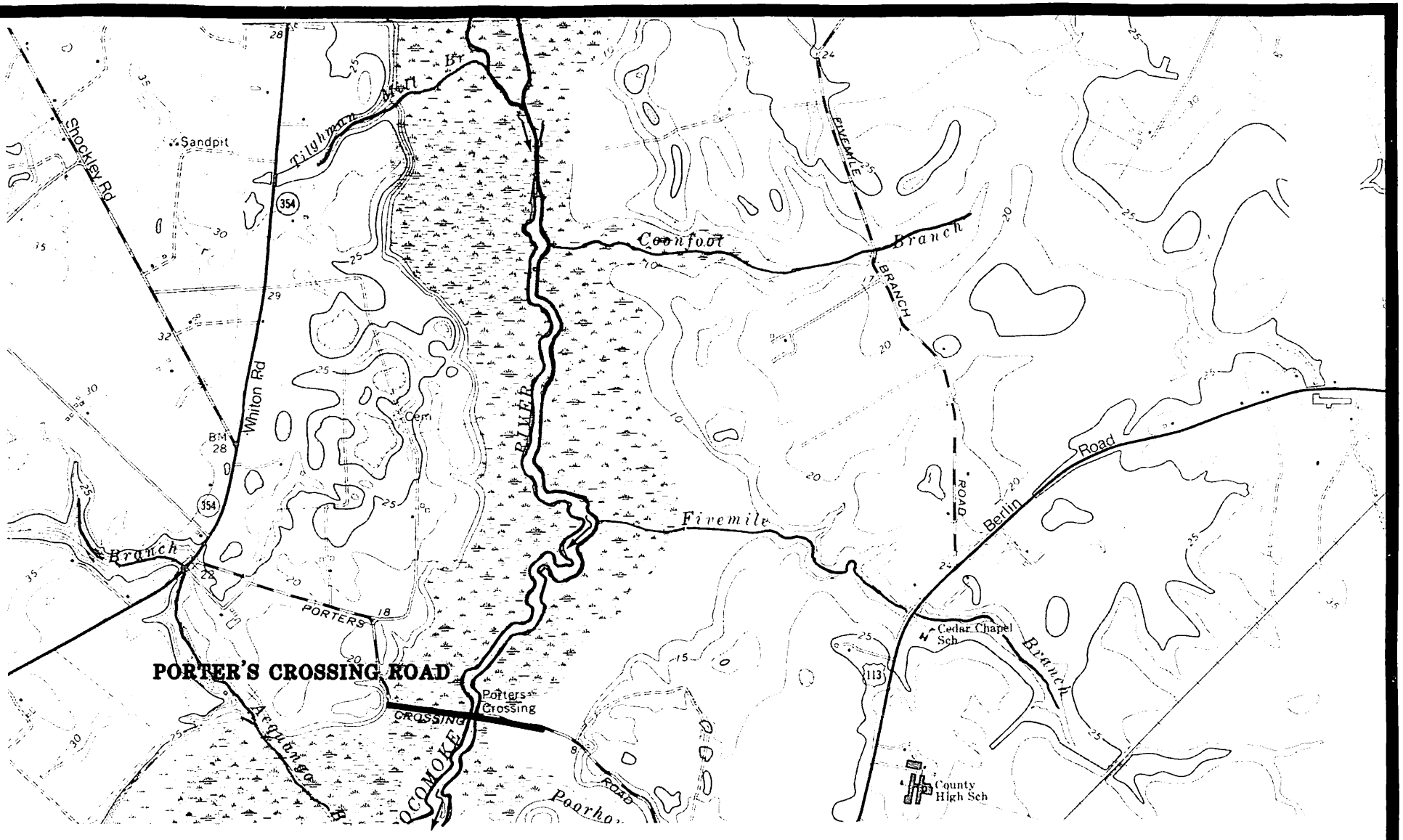
Employ reasonable restraints on allowable volumes of recreational use

Direct development away from the wild river area

Discourage the use of powered boats except those used by the county for channel maintenance purposes

Maintain oxbow cut-offs as fish and wildlife habitat

Provide marked canoe trails up through the oxbow area near the weir



WORCESTER COUNTY

22

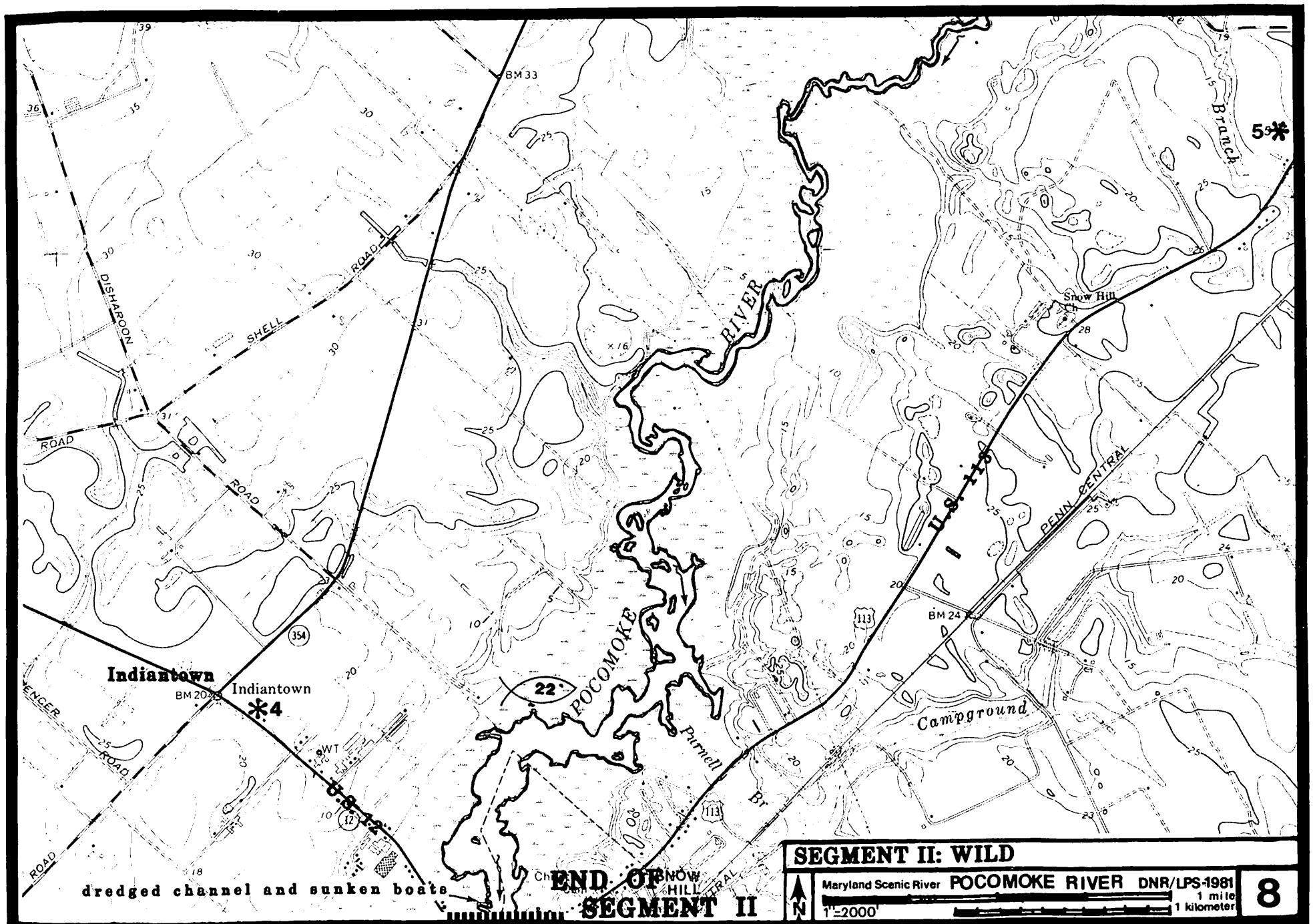
SEGMENT II: WILD

Maryland Scenic River **POCOMOKE RIVER** DNR/LPS-1981

1"=2000' 1 mile 1 kilometer

N

7


SEGMENT II: WILD
Maryland Scenic River POCOMOKE RIVER DNR/LPS-1981
1 mile
1 kilometer
1"=2000'
8
END OF SEGMENT II
dredged channel and sunken boats
Indiantown
Indiantown
*4
POCOMOKE RIVER
Purnell Br
Campground
Snow Hill Ch
Branch
U.S. 113
U.S. 12
PENN CENTRAL
SHELL ROAD
DISHAROON ROAD
ROAD
BM 33
BM 24
BM 20
WT
354
113
12
22
5*

Resource Analysis
SEGMENT III (Scenic or Modified Scenic)

Snow Hill to Pocomoke City (14.6 miles)—this segment of the river contains approximately 4,500 acres of wooded swamp. These remote swamps provide a scenic view from the river and create a wilderness atmosphere with alder, buttonbush, arrow arum, and rose occurring along the banks and scattered islands of black gum, green ash, and cypress standing on the edge of the river. Approximately 13,111 acres of land in this segment are in public ownership. Pocomoke State Forest (which includes the Pocomoke River State Park areas—Shad and Milburn Landing) buffers the River and several creeks from surrounding land uses, and provides recreational access to the river and surrounding areas. Eighty percent of the Pocomoke State Forest is upland stands of managed loblolly pine, and selective cutting has occurred throughout.

Between Pocomoke City and Snow Hill the river is of a rather uniform 400-foot width, and has some of the most valuable wetlands in the watershed. In addition to their scenic value these wetlands support a diversity of wildlife and seasonal concentrations of waterfowl. The wetland areas from Pocomoke City north to the Pocomoke State Forest received highest ratings for eagles, ospreys, and hawks. The wetland units between the north side of Dividing Creek and the mouth of Nassawango Creek were generally rated nine and ten (on a ten point scale) for black duck and waterfowl nesting. Nassawango Creek wetlands were also rated nine or ten as habitat for herring and shad. The Phantom cranefly, a rare insect species, is found in the Dividing Creek area. The area is also valuable for hunting, and serves as important wildlife habitat supporting high densities of songbirds. The lower part of Dividing Creek is canoeable. Atlantic white cedar is present in scattered tracts including a 36-acre tract off the swamp's eastern border near Pocomoke City. This species is rare in the coastal plain of Maryland.

Development in this segment is evident. There are several large farms—some with shoreline erosion due to inadequate buffer zones. Farm and pasture lands come to the edge of the water. Here are located the Nassawango Country Club, Winters Quarters Golf Course, and Cellar House—a 19th century farm house which is registered with the Maryland Historical Trust. Several of the homes have boat docks in the vicinity of Pocomoke City. There are city parks with boat ramps as both Pocomoke City and Snow Hill.

The incorporated towns of Pocomoke City and Snow Hill are located in this segment with associated businesses that utilize the waters of the Pocomoke River. There are at least seven major roads in this area (three of which cross the river), two powerline crossings and a few adverse visual impacts such as trash dumps. Because of improved accessibility and its proximity to these towns, this segment of the river is most susceptible to adverse environmental impacts.

Classification-Related Recommendations

suggested recreational activities

boating (low horsepower)

low intensity tent camping

hiking along marked nature or scenic trails

family picnicking (low intensity)

nature study areas

wildlife management areas

plus any activity recommended for the wild segment

non-recreational uses

single family detached dwellings at low overall intensities

unobtrusive fences, gauging stations and other water-management and public land management facilities

essential public service lines and structures plus any use recommended for the wild segment

all other uses are recommended in moderation following the general policy guidelines

(Modified Scenic)
Same as Segment I, Column 2

Segment-Related Recommendations

Encourage landowners to remove trash, dilapidated shelters and other elements that have adverse environmental and scenic impacts.

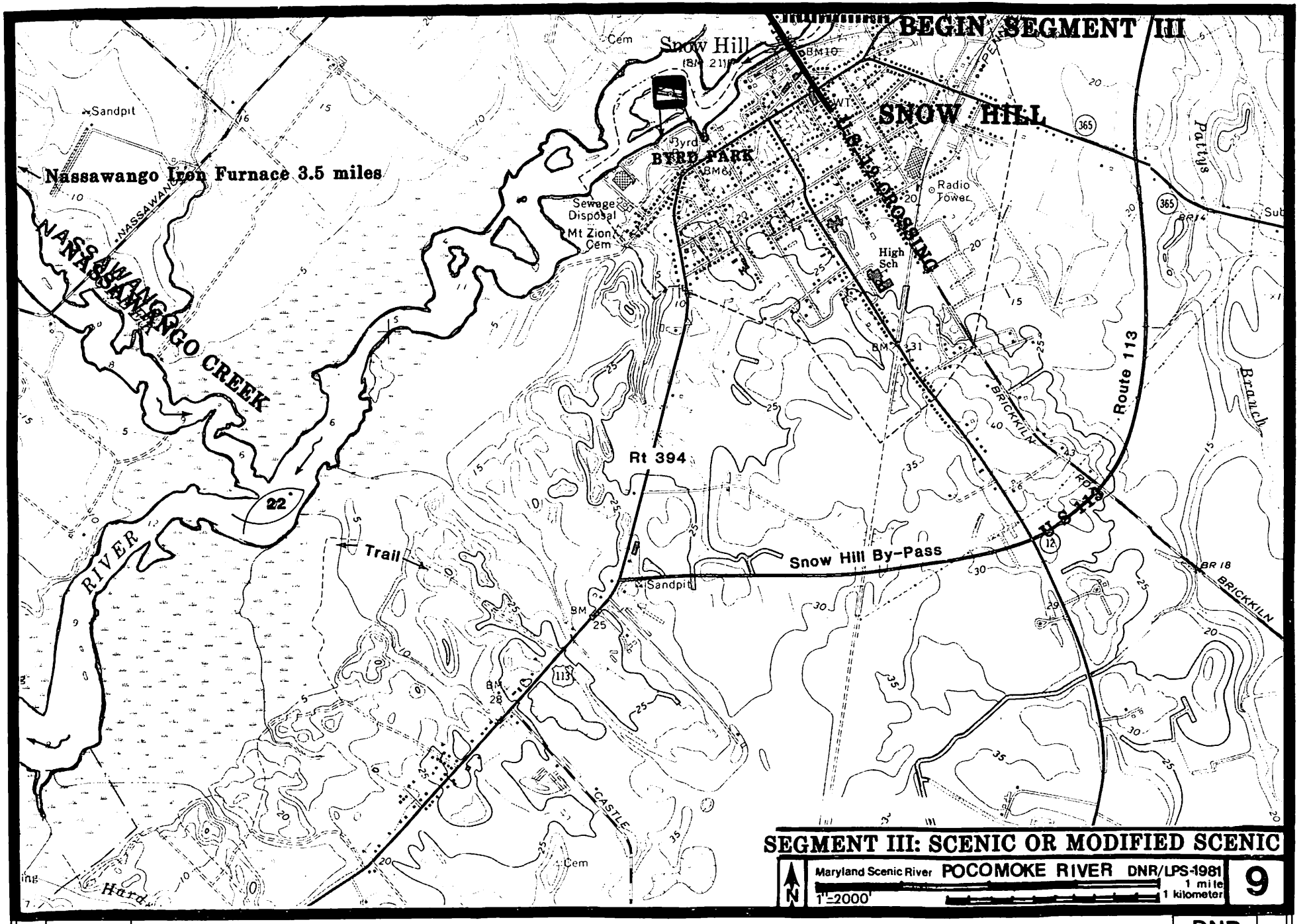
Eliminate, by purchase wherever possible, inholdings in state forest and parks

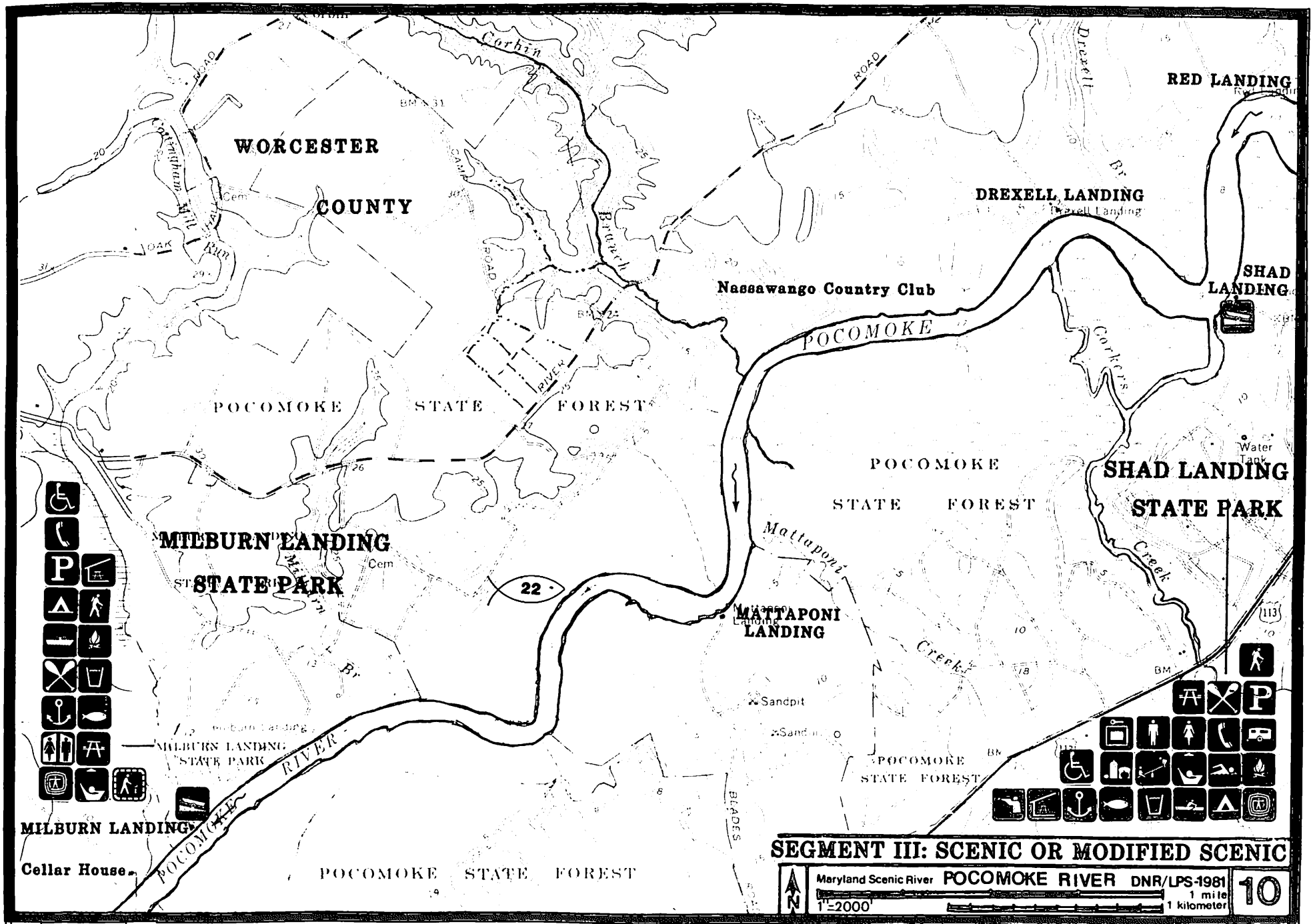
Upgrade city riverside parks at both Pocomoke City and Snow Hill, including re-establishment of vegetation, addition of picnic tables and grills, and improved parking areas

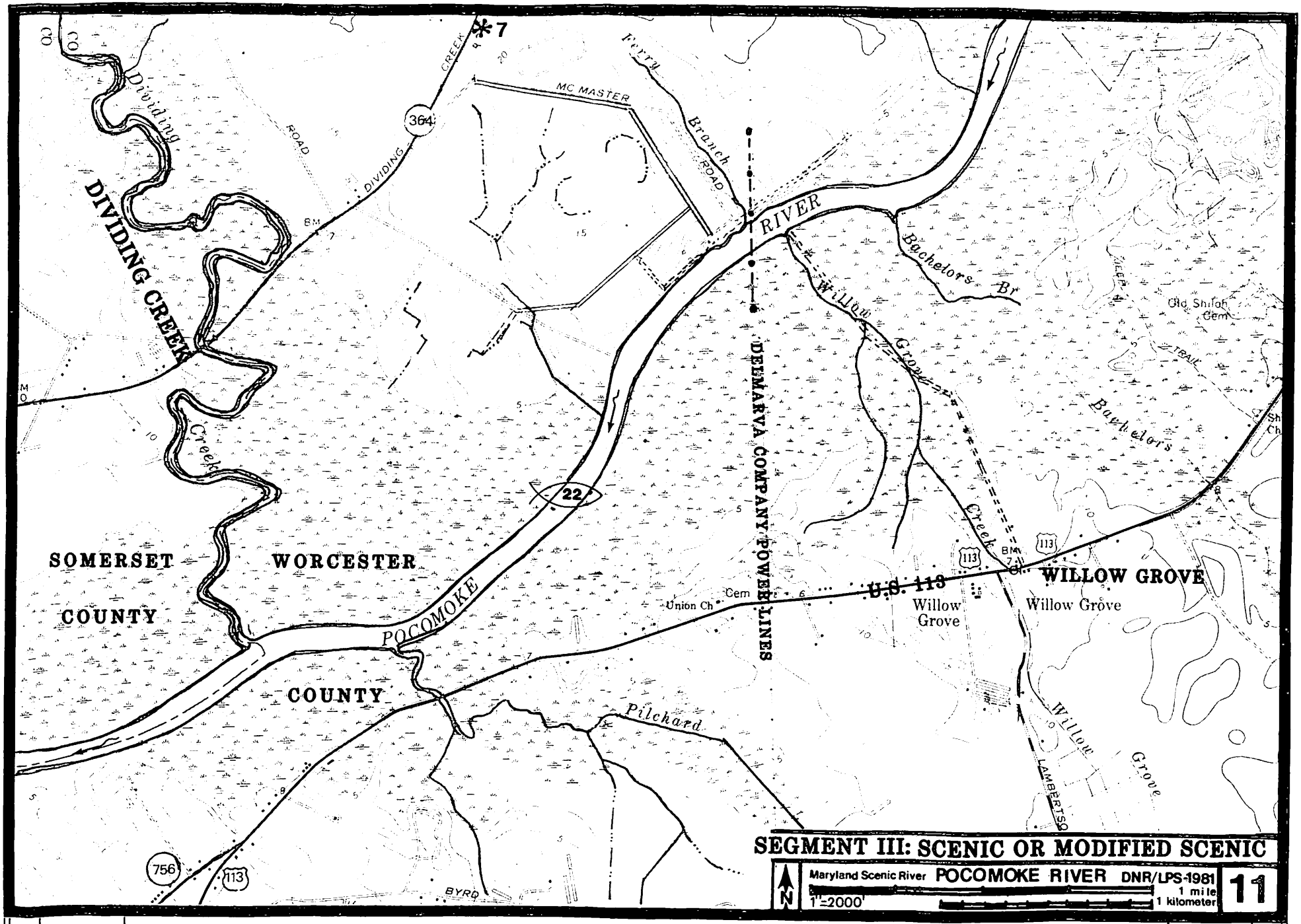
Preserve and protect rare, threatened or endangered plant and animal species in the segment

Establish vegetation buffers where shoreline erosion is evident

Seek scenic easement and consider interpretive signage for Cellar House and other points of interest


BEGIN SEGMENT III
SNOW HILL
Snow Hill
BYRD PARK
Nassawango Iron Furnace 3.5 miles
NASSAWANGO CREEK
NASSAWANGO
RIVER
Sandpit
Sewage Disposal
Mt Zion Cem
Radio Tower
High Sch
Route 113
Rt 394
Snow Hill By-Pass
Trail
BRICKKILN
CASTLE
Pattys
Branch
Cem
SEGMENT III: SCENIC OR MODIFIED SCENIC
Maryland Scenic River
POCOMOKE RIVER
DNR/LPS-1981
1 mile
1 kilometer
1"=2000'
9


WORCESTER
COUNTY
RED LANDING
DREXELL LANDING
SHAD LANDING
Nassawango Country Club
POCOMOKE
POCOMOKE STATE FOREST
POCOMOKE STATE FOREST
SHAD LANDING STATE PARK
MILBURN LANDING STATE PARK
MATTAPONI LANDING
Mattaponi Creek
Corkers Creek
Corbin Branch
Cottingham Mill Run
Water Tank
Sandpit
MILBURN LANDING STATE PARK
MILBURN LANDING
Cellar House
POCOMOKE RIVER
POCOMOKE STATE FOREST
22
113
SEGMENT III: SCENIC OR MODIFIED SCENIC
Maryland Scenic River
POCOMOKE RIVER
DNR/LPS-1981
1 mile
1 kilometer
1"=2000'
10



SEGMENT III: SCENIC OR MODIFIED SCENIC

Maryland Scenic River POCOMOKE RIVER DNR/LPS-1981

1"=2000'

1 mile

1 kilometer

11

Resource Analysis SEGMENT IV(Scenic)

Pocomoke City to Pocomoke Sound (12.7) miles—From Pocomoke City to Pocomoke Sound the river flows in wide broad sweeps through predominantly wooded swamps near Pocomoke City and through low lying marshland from Rehobeth to Pocomoke Sound. The most significant natural area in this segment of the river is "Cypress Swamp", which contains approximately 1,620 acres of tidal wooded swamp on the south side of the river downstream of Pocomoke City. Here bald cypress is abundant and much of it is mature, even though evidence of former logging activity exists. More significantly, this area contains an extensive mixed white cedar forest. Disturbance in this segment, because of inaccessibility and wet soils, is limited. This inaccessibility coupled with the unique wetland type, makes the area a valuable wildlife habitat. Prothonotary warblers are common and regularly nest in these swamps. Wood Duck and dove nest here also. In addition to the wetlands from Pocomoke City north to Pocomoke State Forest, the areas below the Cypress Swamp are rated as excellent habitat for southern bald eagles, ospreys, and hawks and has them in the greatest concentration. This area upstream to Rehobeth is a striped bass and white perch spawning area.

This segment of the river contains significant acreages in public or quasi-public ownership. These include: approximately 1,529.44 acres of the "Cypress Swamps" near Rehobeth; two wildlife management areas (Cedar Island and Pocomoke Sound) encompassing 4,002 acres, and the Maryland Ornithological Society's Irish Grove Wildlife Sanctuary which constitutes another 1,400 acres on the Sound. Pocomoke Sound Fish and Wildlife Management Area is located on the lower river, and contains large tracts on woodland surrounding a salt marsh. The area has been logged in places but has regenerated. There are some extremely large loblolly present with diameters of greater than 20 inches. Adjacent lands are marsh, farmland and woodland. Wildlife is abundant and diverse. The site acts as a buffer between farmland and marsh. Contiguous land use is in timber management.

Fair Island and across the channel are mostly woodlands which are attractive with clean sandy beaches and an impressive view of the bay. The island is undeveloped, but the mainland across from the island contains several roads, and has shoreline development and extensive croplands—many without adequate buffer strips. Some erosion and bulkheading exist.

In this segment there are several known archaeological sites; two incorporated towns (Rehobeth and Shelltown); several boat ramps (Marumsco Creek, Shelltown, Cedar Hall Branch, and Rehobeth); three historical sites (Beverly, Vessey's Orchard and Pucheon Landing). A State champion cypress tree stands in the water near Beverly.

Classification-Related Recommendations

suggested recreational activities

boating (low horsepower)

low intensity tent camping

hiking along marked nature or scenic trails

family picnicking (low intensity)

nature study areas

wildlife management areas

plus any activity recommended for the wild segment

non-recreational uses

single family detached dwellings at low overall intensities.

unobtrusive fences, gauging stations and other water-management and public management facilities.

essential public service lines and structures plus any use recommended for the wild segment.

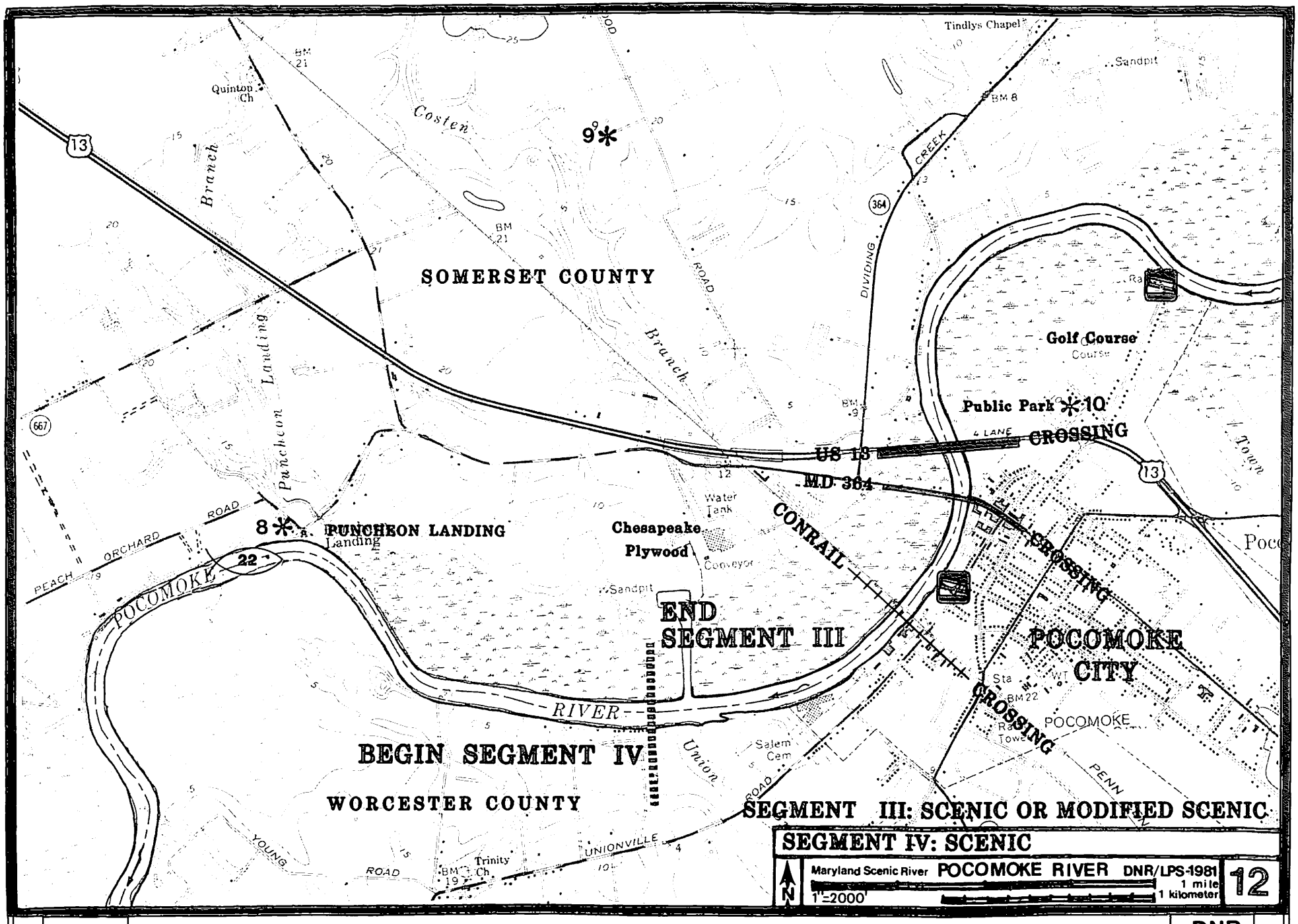
Segment-Related Recommendations

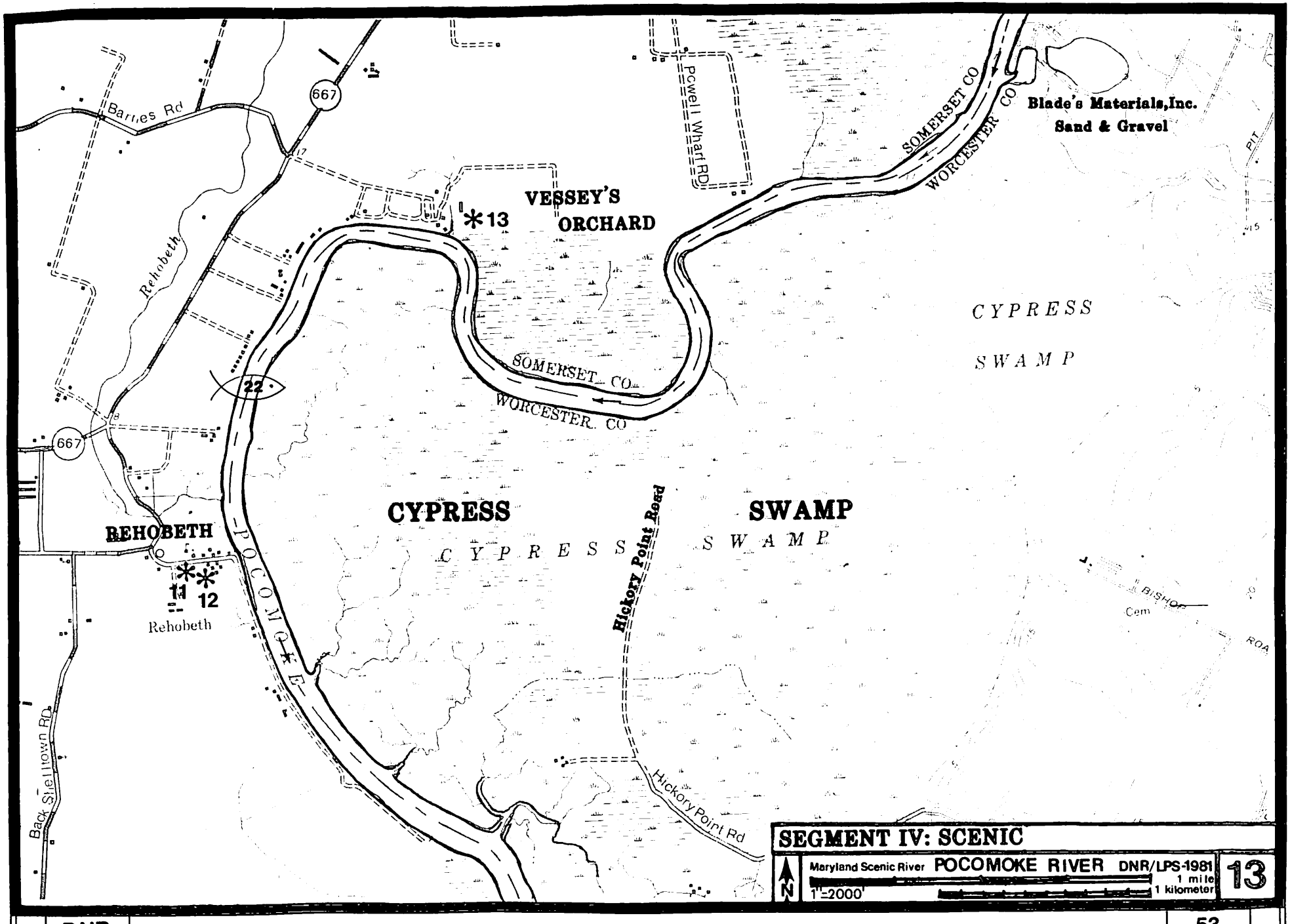
all other uses are recommended in moderation following the general policy guidelines

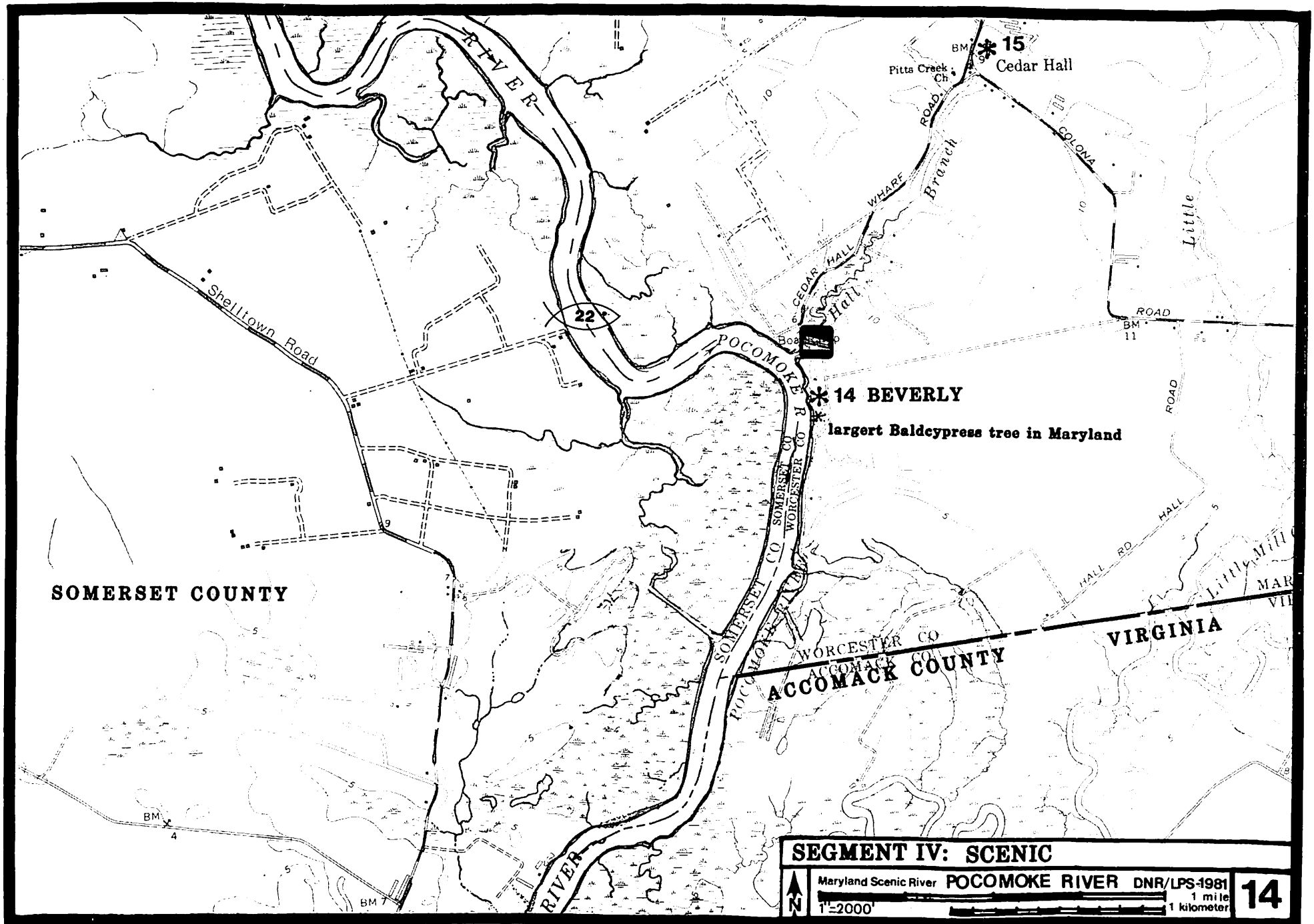
Seek scenic easements and consider interpretive signage for historical sites and points of interest e.g. Puncheon Landing, Vessey's Orchard, Beverly, Reward, and for the largest bald cypress in Maryland

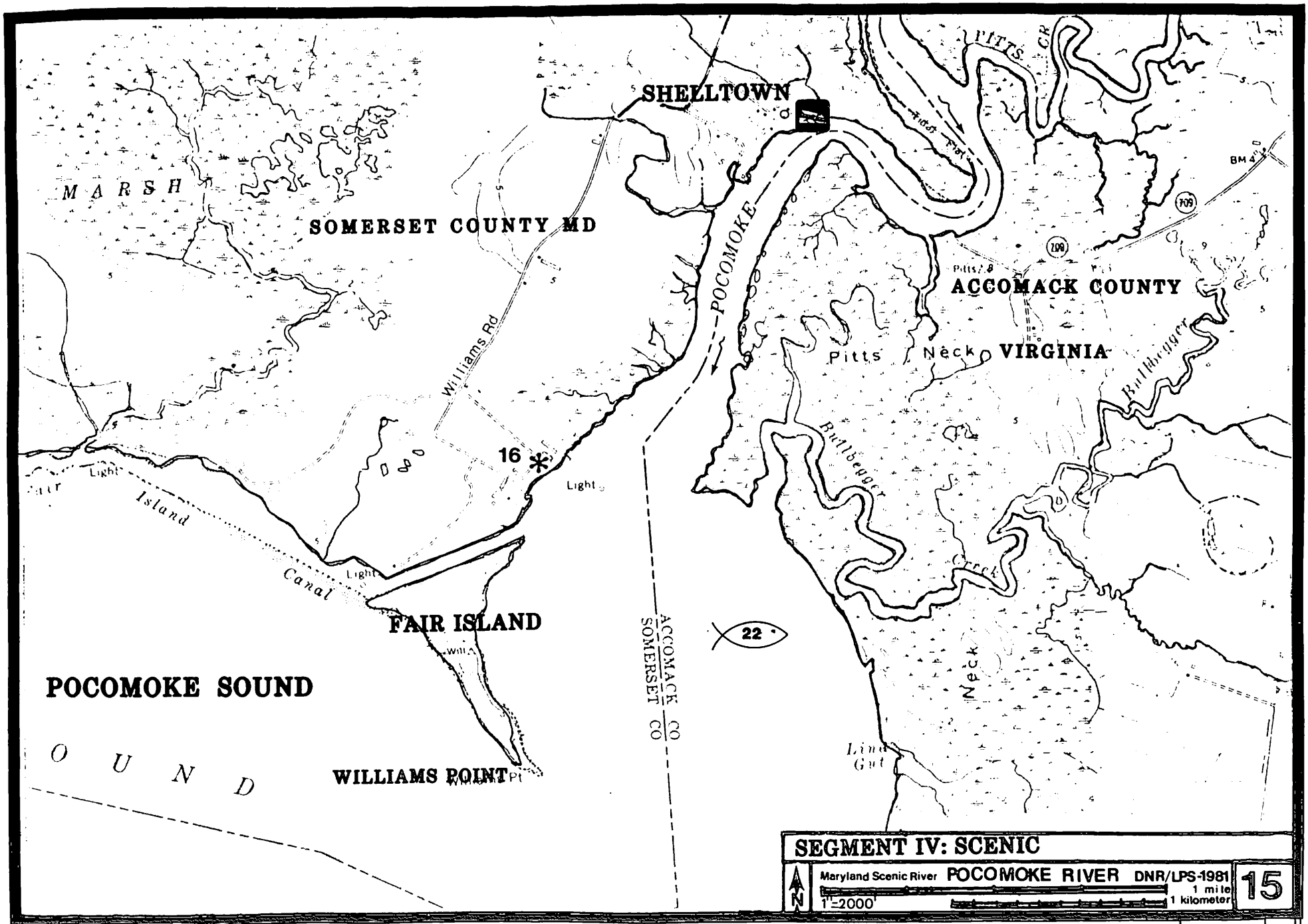
Continue purchase of cypress swamps, meanwhile seek scenic easements or land donations form private industries and private landowners

Provide a scenic trail along Hickory Point Road and picnic and camping sites with convenience facilities


SOMERSET COUNTY
WORCESTER COUNTY
Quinton Ch
Costen Branch
Branch
Landing
Puncheon
ROAD
PEACH ORCHARD ROAD
POCOMOKE
RIVER
9
8
PUNCHEON LANDING
Landing
Chesapeake Plywood
Conveyor
Water Tank
Sandpit
END SEGMENT III
BEGIN SEGMENT IV
CONRAIL
US 13
MD 364
4 LANE
CROSSING
DIVIDING
CREEK
Tindlys Chapel
Golf Course
Public Park
10
Town
POCOMOKE CITY
Sta
WI
BM 22
Ra
Tower
POCOMOKE
PENN
Salem Cem
Union
ROAD
YOUNG
ROAD
Trinity Ch
UNIONVILLE
BM 21
BM 8
BM 9
667
364
13
22
SEGMENT III: SCENIC OR MODIFIED SCENIC
SEGMENT IV: SCENIC
Maryland Scenic River POCOMOKE RIVER DNR/LPS-1981
1 mile
1 kilometer
1"=2000'
N
12


Barnes Rd
667
Rehobeth
Powell Wharf RD
SOMERSET CO
WORCESTER CO
Blade's Materials, Inc.
Sand & Gravel
PIT
VESSEY'S
ORCHARD
13
CYPRESS
SWAMP
SOMERSET CO
WORCESTER CO
22
667
REHOBETH
CYPRESS
SWAMP
Hickory Point Road
POCOMOKE
11
12
Rehobeth
BISHOP
Cem
ROA
Back Shellltown RD
Hickory Point Rd
SEGMENT IV: SCENIC
N
Maryland Scenic River POCOMOKE RIVER DNR/LPS-1981
1"=2000'
1 mile
1 kilometer
13


15
Cedar Hall
Pitts Creek Ch
ROAD
COLONA
WHARF
Branch
Little
CEDAR HALL
Hall
ROAD
22
Shelltown Road
POCOMOKE R
14 BEVERLY
largert Baldcypress tree in Maryland
SOMERSET CO
WORCESTER CO
SOMERSET COUNTY
HALL RD
HALL
ACCOMACK CO
ACCOMACK COUNTY
VIRGINIA
RIVER
SEGMENT IV: SCENIC
Maryland Scenic River
POCOMOKE RIVER
DNR/LPS-1981
1 mile
1 kilometer
1"=2000'
N
14


SHELLTOWN
PITTS CR
MARSH
SOMERSET COUNTY MD
POCOMOKE
ACCOMACK COUNTY
VIRGINIA
Pitts Neck
Williams Rd
Bullbegger
16
Light
Island
Canal
FAIR ISLAND
POCOMOKE SOUND
WILLIAMS POINT
ACCOMACK CO
SOMERSET CO
22
Creek
Neck
Gut
SEGMENT IV: SCENIC
Maryland Scenic River POCOMOKE RIVER DNR/LPS-1981
1"=2000'
1 mile
1 kilometer
N
15

The Management Plan

The resource use and protection section represents a plan showing physical recommendations. The management plan is designed to apply organizational, management, legal and other techniques to accomplish the physical plan. To facilitate the management plan, management policies, roles and responsibilities, and implementation techniques are outlined. In implementation, it is likely that a variety of techniques will be necessary; therefore, every posible technique should be intitially considered to determine its feasibility for implemtation.

Management Policies	Requirements	Administration
1. The management of all State forest land within the wild and scenic river boundaries will be for aesthetic and recreational purposes only.	Implement recommendations for forestry operations found in this plan.	Forest and Parks
2. All public camping within the wild and scenic river boundaries will be confined to those lands specifically designed for such purposes.	Care shall be taken to see that recreation users do not infringe upon private property.	Forest and Parks
3. Only those hiking trails which do not adversely impact the ecology of the river corridor should be established.	Identify and establish a trails system.	Park Planning
4. A wild and scenic river corridor should be established and enforced in the affected Maryland Counties.	a) Somerset and Wicomico counties shall enact or amend such ordinances and maps as necessary to establish a Wild and Scenic land use corridor.	Somerset County Planning & Zoning Wicomico County Planning & Zoning
	b) Encourage Worcester County to enforce conservation zoning regulations.	Worcester County Planning & Zoning
5. The State of Maryland shall be responsible for providing recreational facilities on State lands.	Provide plans for additional recreational facilities.	Park Planning
6. Facility design will be compatible with wild, scenic, or modified scenic classification.		Facilities Design Section Program Open Space
7. Recreational use will be closely regulated to prevent adverse environmental impacts on sensitive environmental areas.	Identify environmentally sensitive areas in need of regulation. Regulate recreational use.	Forest and Parks

Management Policies	Requirements	Administration
8. The lands or interests in lands to be acquired will be acquired where funds are available for such purchases from willing sellers.	Identify those people who are willing to sell or donate land within the scenic river planning boundaries.	Program Open Space and Department of General Services
9. In all resource use planning scenic and wild river requirements shall be taken into consideration where a scenic or wild river is involved.	Continue to coordinate with the Maryland Scenic Rivers Program.	Water Resources, Coastal Zone Unit Secretary of Natural Resources
10. A dam or other structure impeding the natural flow of a scenic and wild river may not be constructed, operated, or maintained, and channelization may not be undertaken, unless the Secretary (of DNR) specifically approves.	A method should be established whereby the Secretary will review permits for such modifications.	Water Resources, Coastal Zone Unit Secretary of Natural Resources
11. Urban waterfronts along the river should be maintained and enhanced.	Municipalities and/or Counties should provide a plan for the revitilization of waterfronts.	Town and/or County Planning
12. Provide for public access to the river and acquire scenic easements to points of interest.		Program Open Space Maryland Environmental Trust Maryland Historical Trust
13. Activities carried out in the flood plain or wetland area should be done in a manner which minimizes the destruction or degradation of wetlands and preserves and enhances their natural and beneficial fish and wildlife values.	Whenever possible, discourage development on the floodplain and in the wetlands.	Water Resources-Division of Wetlands Permits Corps of Engineers
14. Pollutants which detract from the rivers scenic character should be kept from entering the waters of the Pocomoke.	Implement recommendations made in the "208" Plan for the Pocomoke.	Water Resources Administration
15. A continuing maintenance program for the river should be maintained.	Prepare and implement river maintenance program.	Pocomoke River Advisory Committee (PRAC)
16. The bulk of new development activity will be directed away from the sensitive environmental and ecological areas and situated on lands with the least environmental constraints.	Protect wetlands and sensitive environmental and ecological areas by zoning regulations.	County Planning & Zoning

Management Policies	Requirements	Administration
17. The counties shall assist in the maintenance of water quality by preventing inappropriate land uses in areas where it may degrade water quality.	Encourage Best Management Practices (BMP's) found in the Maryland "208" Plan and in SCS EQ Program.	County Soil Conservation Services
18. Excavation and borrow sites will be directed away from the scenic corridor.		
19. Measures to protect the natural and scenic values of the river shall be implemented.	a) Seek scenic easements for preservation of unique natural areas and/or areas where development might threaten the integrity of the river.	Program Open Space County Planning & Zoning SCS and PRAC
	b) Initiate a program to protect the natural shoreline.	Fish and Wildlife
	c) Use selective cutting to avoid windthrow.	Private landowners
	d) Maintain channel clear of fallen trees and logs.	Maryland Environmental Trust
	e) Preserve canopy.	Nature Conservancy
	f) Establish vegetation buffers where needed.	Department of State Planning
	g) Assist local units of government in enactment of land use controls.	
20. Adverse visual impacts will be mitigated and/or corrected.	a) Encourage counties to adequately maintain signs at river crossings and to prosecute violators of county trash and littering ordinances.	County Planning & Zoning
	b) Removal of deteriorating structures from scenic corridor.	Private landowners
	c) Encourage the retention of vegetation in the scenic corridor.	
	d) Seek cooperative agreements with farmers and landowners to retain or establish vegetation buffers between cropland and river.	Soil Conservation Service

Implementation Techniques*

The following major techniques can be used in accomplishing the wild, scenic and recreational river objectives for the Pocomoke. They are based upon existing legislation.

ACQUISITION

Outright Purchase is a real estate transaction in which property is acquired in fee simple. This technique should be applied when strategic land areas are needed for clearly identifiable river preservation and development purposes and in areas which are programmed for public recreation use. It is the soundest technique for assuring complete protection and development control.

Installment Purchase is an acquisition in which a purchaser negotiates a per-acre price with the owner and agrees to buy a certain number of acres per year. The owner is relieved of real property tax responsibilities, commencing at the time the agreement is made. The owner may choose to remain on his land until all is sold and paid in full.

Long Term Lease with Option to Buy involves the negotiation of a lease price with the owner and includes conditions for use and eventual purchase of the property in question.

Purchase & Lease-Back involves the acquisition of a site while it is still available at low cost. The purchaser then leases the land back to a user for either continuation of its present use or for other uses in accordance with policies for scenic preservation and recreation. The purchase and leaseback can be disadvantageous because it puts the purchaser-lessor in the position of a landlord responsible for property management and maintenance. Also, land, if purchased by a governmental body, is tax exempt. Advantages can be obtained if a public body is willing to accept the responsibility and if a high degree of maintenance is assured.

Purchase and Resale is a technique in which land is purchased and re-sold only under conditions or restrictive covenants established by the party re-selling the land. After resale the original buyer is relieved of ownership and maintenance responsibilities. Also, the land is then taxable and offers revenues to public bodies for land purchases in other strategic areas.

*From *Scenic Rivers in Maryland*, 1977.

Condemnation through the right of eminent domain provides governmental jurisdictions with the right to acquire land for a well-defined public purpose. Eminent domain could include full property rights or the acquisition of easements and leases. Condemnation involves the determination of a fair market value for the property and a clear definition of the public purpose for which it is being condemned. This is an approach normally used only if fee simple acquisition is not possible at a fair price and if an owner is reluctant to sell under any circumstances.

Donations of land are sometimes made from private owners or organizations interested in a certain cause. Land donations can be encouraged by granting life occupancy and by arranging certain tax advantages.

Land exchange is a means of trading the ownership or control of land between one owner and another to obtain mutual advantages.

Voluntary Agreements may be applied to commit another use to privately owned agricultural land, large industrial holdings, large forest areas, private utility easements and land under ownership or administration of government agencies. These agreements would be strictly voluntary with permission to use the land only in clearly specified ways.

Easements would allow land along rivers to remain in private ownership, but it could be used only for the purpose specified in the easement agreements, including limitations upon the development of the land in question. Only those rights necessary to regulate the use of the property are purchased. A fair price is determined by the difference between market value of the land unrestricted and the value of land subject to the restriction set forth in the easement. The easement technique allows land to remain on the tax rolls and permits continuing use by the present owner. The cost of easement acquisition can be reasonable in some areas but costs in intensively developed areas are normally not feasible. Examples of land that might be acquired include: (1) lands to be used in active recreation; (2) lands which possess outstanding scenic, natural, scientific or other values which can be best protected by placing the land in public ownership; (3) islands, and (4) trails. Lands to be acquired in scenic easements might include: (1) lands highly visible from the water surface; (2) lands adjacent to or across the river from state owned lands; (3) land with foreseeable adverse management practices; (4) enviromentally sensitive lands which might be adversely affected by development; (5) lands which possess outstanding scientific, natural and other similar values.

The power to tax can be used as a tool for preserving open space and recreation opportunities along scenic rivers. The property tax is an important device affecting the nature and timing of land development. However, its present uniformity within specific areas and assessment at market value tend to limit its use for open space preservation. Regardless, there are several taxation methods which should be considered as key implementing techniques for the scenic river plans.

Tax Exemptions are sometimes authorized for land that provides public benefit such as historic places, public service areas, private lands open to public hunting or fishing or other such public uses. This can be an important device to use by private enterprises with land holdings along river areas. Although the land may not be contemplated for development purposes, it may be needed for other company purposes. Private enterprises could provide public benefits by keeping these lands undeveloped or having them developed in accordance with the scenic rivers plans, while enjoying a tax benefit. Chapter 576 of the Annotated Code of Maryland allows tax credits up to 100 percent of the total property tax if the owner grants a perpetual easement to the county, state or federal governments.

Preferential Assessment is an approach under which land presently being taxed because of its use potential is arranged to be kept in its present use for a longer period of time. In this technique, land is assessed at its agricultural or limited use value in order to remove tax pressures on owners to sell at a speculative price for profit. Although this technique does not assure long-range open space preservation, it does give the owner a continuing tax advantage, therefore, not impeding eventual sale by the owner at a considerable profit. This technique requires a clear designation of the restrictions on the land for open space and related uses. A land use plan must be provided and there must be a provision for recapturing the land value increment achieved during the preferential assessment period. Also, the taxing bodies must be compensated for any loss of revenue.

Tax Foreclosures are applied to delinquent properties and can be made by taxing bodies. This technique should be pursued if properties are in stragetic locations for scenic river purposes or if land exchange possibilities exist.

Special Districts for scenic preservation and recreational development involve the delineation of a legal or physiographic boundary and the determination of specific responsibilities. Special districts would have taxing powers and the power to purchase and maintain open space and recreational land. Special scenic corridor districts or conservation districts should be considered.

PLANNING AND REGULATION

Comprehensive Planning provides the framework for land development and use practices along scenic river corridors. The process of comprehensive planning was utilized in the preparation of this scenic rivers report and provides the overall guidelines for the protection, use and development of designated areas along the river corridors. Planning, being a continuing process, should be performed in even greater detail in each local area along river corridors. Planning per se is not touted as an effective implementation device. But there is real value in its use as a guideline for decision-making, in its factual basis, in its forethought and in its logic. Persuasion is the strongest power of implementation through comprehensive planning.

Zoning has been in use in the counties and municipalities of Maryland for many years. The concept, as it applies to scenic rivers, is useful for the purpose of regulating the use of the land, the density of development and the protection of areas in which open space and natural characteristics should be preserved. There are several zoning techniques most appropriate for implementing scenic river policies and plans:

Cluster Zoning—allows dwelling units to be placed closer together than normally permitted in the district in which they are located, providing the overall density is retained. Open space corridors can therefore be created between clusters of housing. This concept is also very applicable to areas of unique topography where clustering can occur on developable portions of land, leaving natural areas and areas more difficult to develop virtually unobstructed.

Flood Plain Zoning—is particularly significant in the preservation of scenic beauty and natural areas along rivers and streams because it provides for the regulation of development in dangerous areas of flooding, thus applying preventive measures against flood damage. It provides secondary benefits by prohibiting development and creating open space characteristics along river banks.

Other Zoning Approaches—may be used to regulate land development so that open spaces and natural areas are preserved. Large-lot zoning, agricultural zoning and conservation district zoning are specific examples that are particularly effective in preserving extensive open areas.

Subdivision Regulations must work in concert with zoning in the preservation of open space and other scenic and natural features. These regulations apply to the layout of lots, streets, drainage, utilities, and other facilities for land development. Items of interest pertaining to scenic river preservation include the prevention of sewage emission into streams, the prevention of soil erosion and siltation, and the funds for recreation as a part of the land subdivision effort.

Official Maps are regulatory devices which outline the locations programmed for public improvements and set forth restrictions on development within thise boundaries. In most cases, there is a maximum period within which the land can be held without construction of the public improvements. After a maximum period has passed, the governing agency must either purchase the property or forfeit control and restrictions on its development.

Public Utility Policies and Staging is an element of planning and programming which affects significantly the patterns of urban development along our rivers. The staging and construction of utilities to service new development with water, sewer and other utilities will have a profound effect on the ability to protect and enhance river corridors. The following table summarizes various implementation techniques, indicating which techniques are likely to be most effective in accomplishing the objectives of each Use Area shown on the Concept Plans for the five recommended Scenic Rivers. Although the major responsibilities for applying each technique are shown, all techniques could be applied in many instances and special conditions could make techniques not recommended on the table more relevant than those indicated. This schedule of relationships between Use Areas, implementation techniques and responsibilities is intended only as a general guide and should be used very carefully when applied to specific locations and jurisdictions.

SCENIC RIVERS IMPLEMENTATION SUMMARY

Major Implementation Techniques	Use Areas Where Technique Most Effective*	MAJOR RESPONSIBILITY						
		Private (For Profit)	Semi-Private (Non-Profit)	Semi-Public Groups or Associations	Public			
					Municipal	County	State	Federal
ACQUISITION								
Outright and installment purchase	N, L, M, I	■	■	■	■	■	■	■
Purchase and leaseback or resale	N, L, M, I	■	■	■	■	■		
Easement and purchase or development rights	N, L, M				■	■	■	
Condemnation through right of eminent domain	N, L, M, I				■	■	■	■
Land donations	N, L, M, I	■	■	■				
Voluntary agreements to permit recreational use of land	N, L	■	■	■				
TAXATION								
Tax exemptions	N, L, M				■	■		
Preferential assessment	N, L, M				■	■		
Tax foreclosures	N, L, M, I				■	■		
Creation of special preservation and recreation districts with taxing powers	N, L, M				■	■		
PLANNING AND REGULATION								
Comprehensive Planning	N, L, M, I			■	■	■	■	
Zoning								
Cluster	N, L, M, I				■	■		
Flood Plain	N, L, M, I				■	■		
Large Lot	N, L				■	■		
Shoreline	N, L, M, I				■	■		
Historic District	N, L, M, I				■	■		
Subdivision Regulations	N, L, M, I				■	■		
Official Map	L, M, I				■	■		
Public Utility Policies and Staging	N, L, M				■	■	■	■

***USE AREA CODE**

N-Natural Use
L-Limited Human Use
M-Moderate Human Use
I-Intensive Human Use

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