

**A Greenway Strategy for WEEMS CREEK**

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IN REPLY REFER TO

## United States Department of the Interior

NATIONAL PARK SERVICE

MID-ATLANTIC REGION  
143 SOUTH THIRD STREET  
PHILADELPHIA, PA. 19106

Dear Weems Creek Friends:

Enclosed is a report entitled "A Greenway Strategy for Weems Creek."

The study was conducted by the National Park Service in cooperation with the Maryland Department of Natural Resources and the Weems Creek Conservancy. The purpose of the study has been to prepare a resource inventory and analysis, and to set forth options for alternative management strategies for the conservation of Weems Creek.

The report contains an assessment of the natural resources and significant attributes of the Creek which make it a special place to live and visit; an analysis of those threats that could diminish its special qualities; and an identification of alternatives for the management and conservation of the resources. Interwoven throughout the assessments are the perceptions and attitudes of local landowners, derived from an attitudinal survey which was conducted by Conservancy volunteers.

The options offer a range of conservation strategies from the private to the city, county, state, and federal levels. Greatest emphasis has been placed on the actions local landowners can take, including conservation easements, mutual covenants, a land trust, and a variety of education projects. Other options explore how the city and county could coordinate their land use regulations to the Creek. Several options identify how existing state programs could address specific resource issues.

This study has provided an opportunity to develop ways by which both the public and private sectors can share responsibility for conserving resources and areas which are of recognized importance. With its relatively undeveloped natural features within a rapidly developing city and county, Weems Creek is indeed a special place.



Your continuing interest in and support for this effort has greatly assisted us. Your contributions to the study, through our meetings, the attitude survey, and informal conversations have provided us with both insights into the area and ideas for conserving and enhancing it. With the presentation of the report, the initiative passes to you. The future of the Weems Creek area depends upon the actions and commitment of the people who live here.

We believe that the people of the area now have a unique opportunity to take the initiative in ensuring that the outstanding qualities of the river environment are conserved and, where necessary, improved. The strategies we have outlined are designed for you to consider and use.

For further information about this study or other river conservation projects contact J. Glenn Eugster, Chief, Division of Natural Resource Planning, of this office. We have greatly appreciated your continuing interest and assistance.

Sincerely,

Don H. Castleberry  
Deputy Regional Director

Enclosure

# **A Greenway Strategy for WEEMS CREEK**

Weems Creek Conservancy

Maryland Department of Natural Resources  
Land Planning Services  
Wild and Scenic Rivers Program

United States Department of the Interior  
National Park Service  
Mid-Atlantic Regional Office  
Division of Natural Resource Planning

DEPARTMENT OF NATURAL RESOURCES  
INFORMATION RESOURCE CENTER  
NON-CIRCULATING

August 1982



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# Acknowledgements

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The following persons played an invaluable role in providing ideas, information and encouragement:

Jules Bigio, Chairman, Weems Creek Conservancy

Elizabeth McWethy, Founder, Weems Creek Conservancy

Ren Serey, Planner, Maryland Department of Natural Resources

Other persons whose contributions of research and consultation are most appreciated are:

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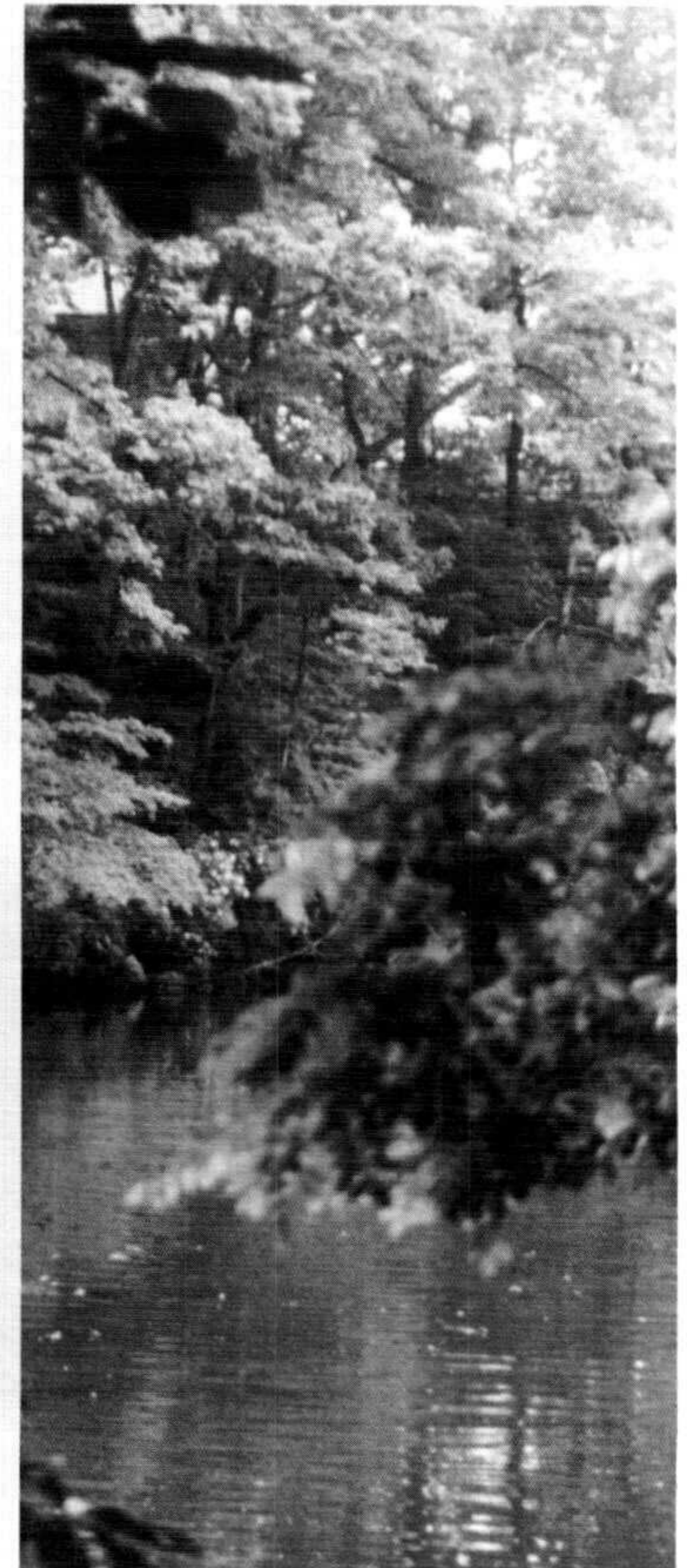
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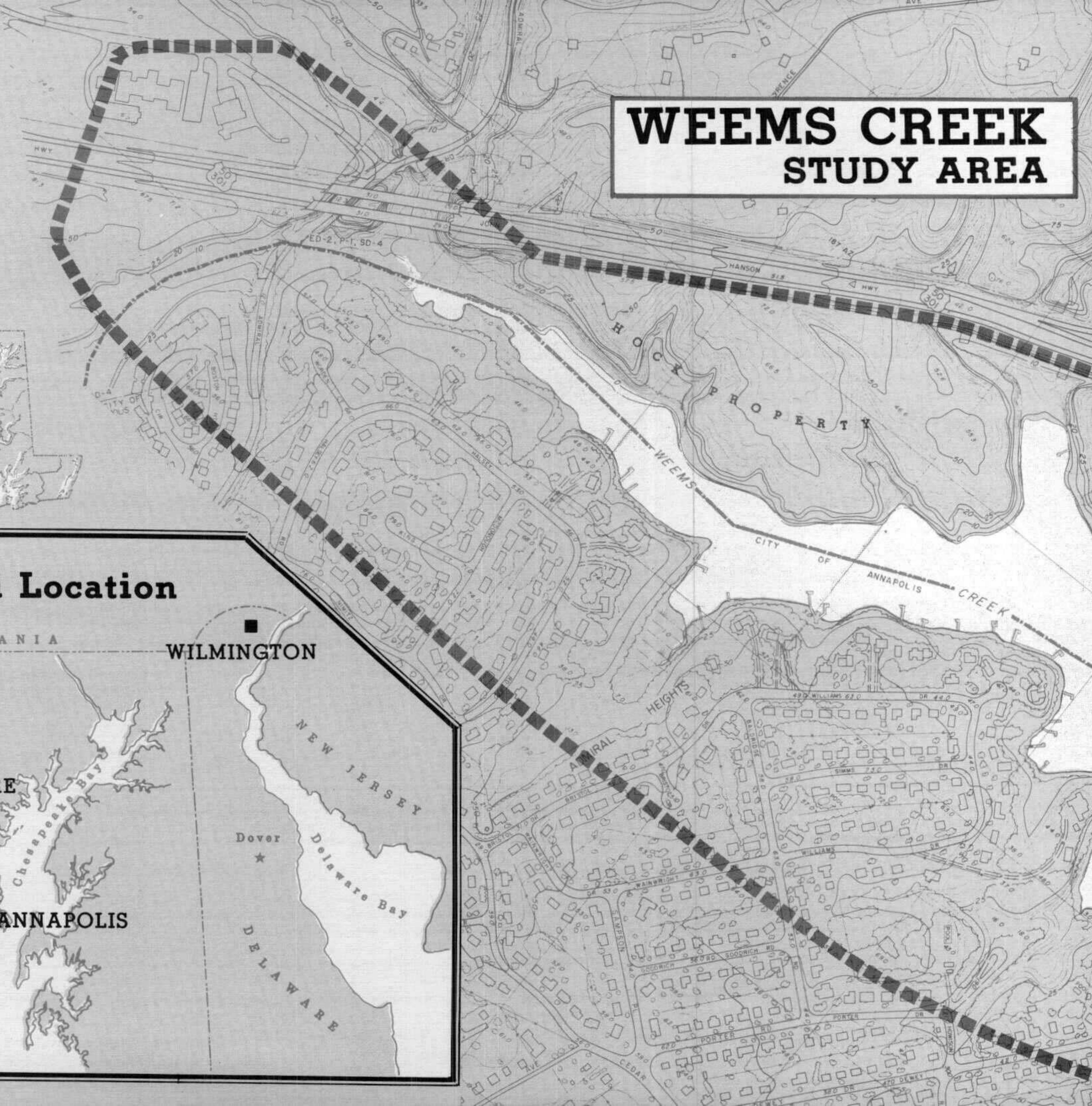
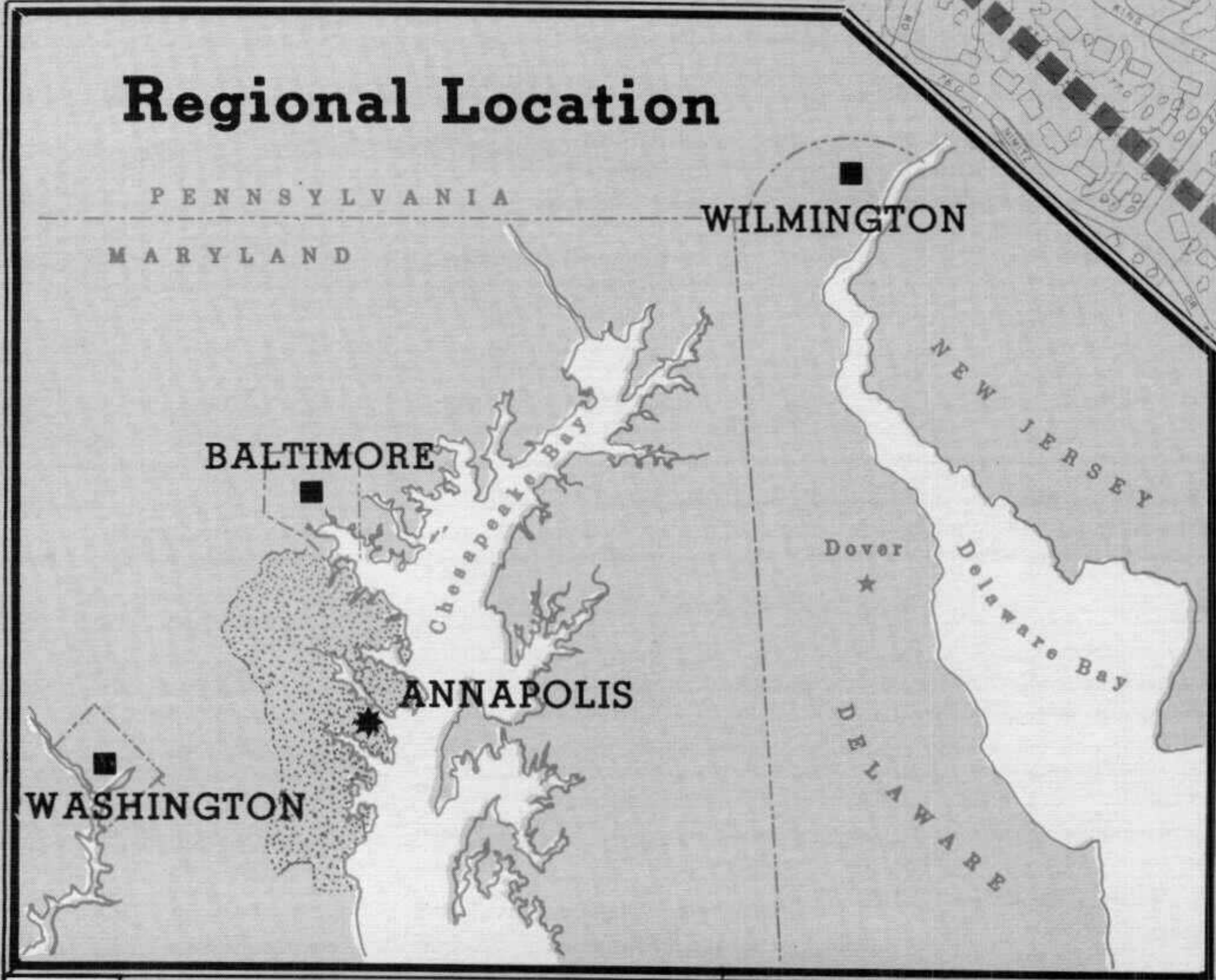
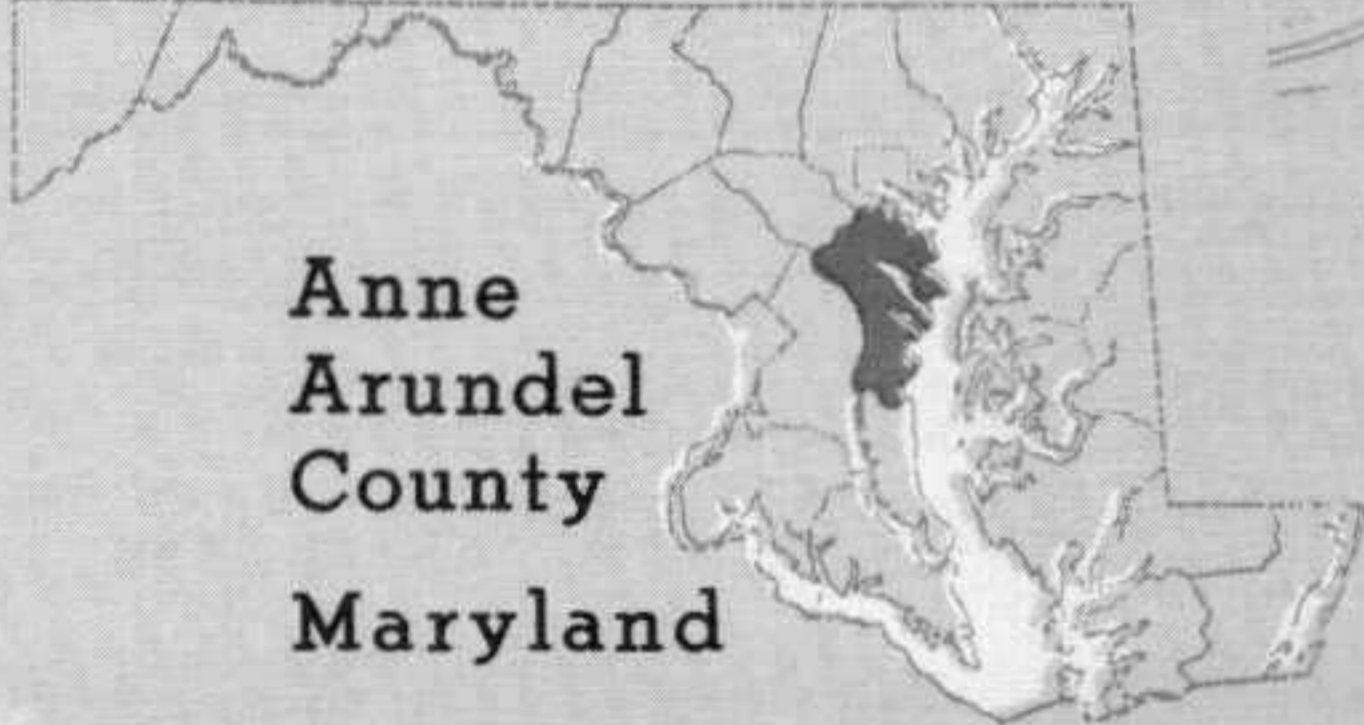
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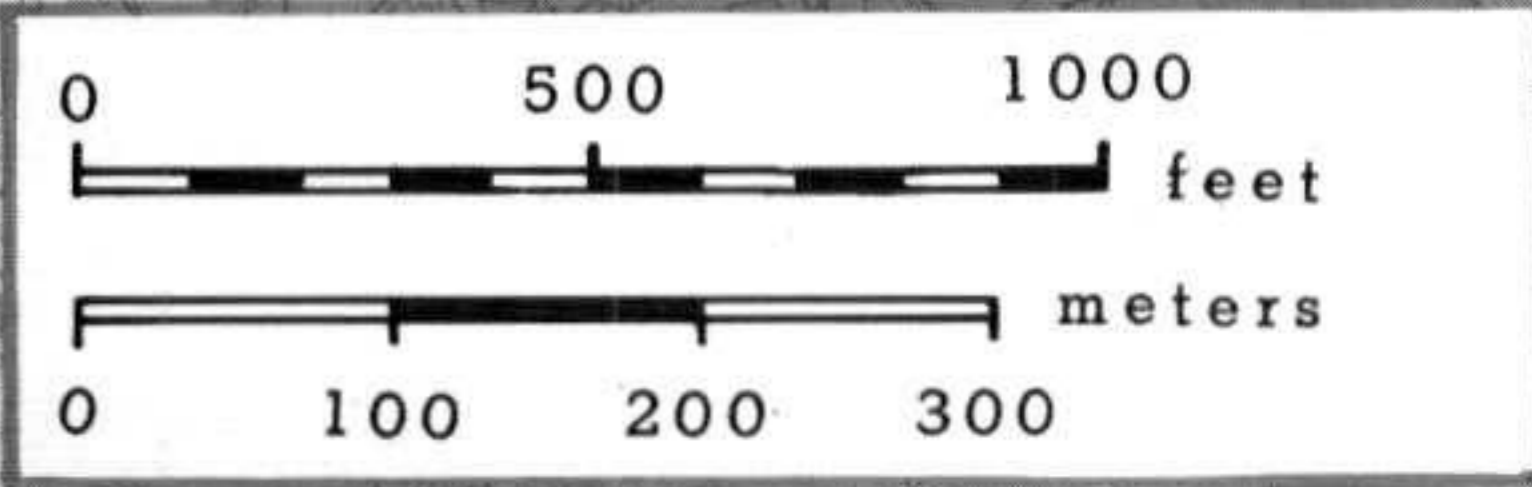
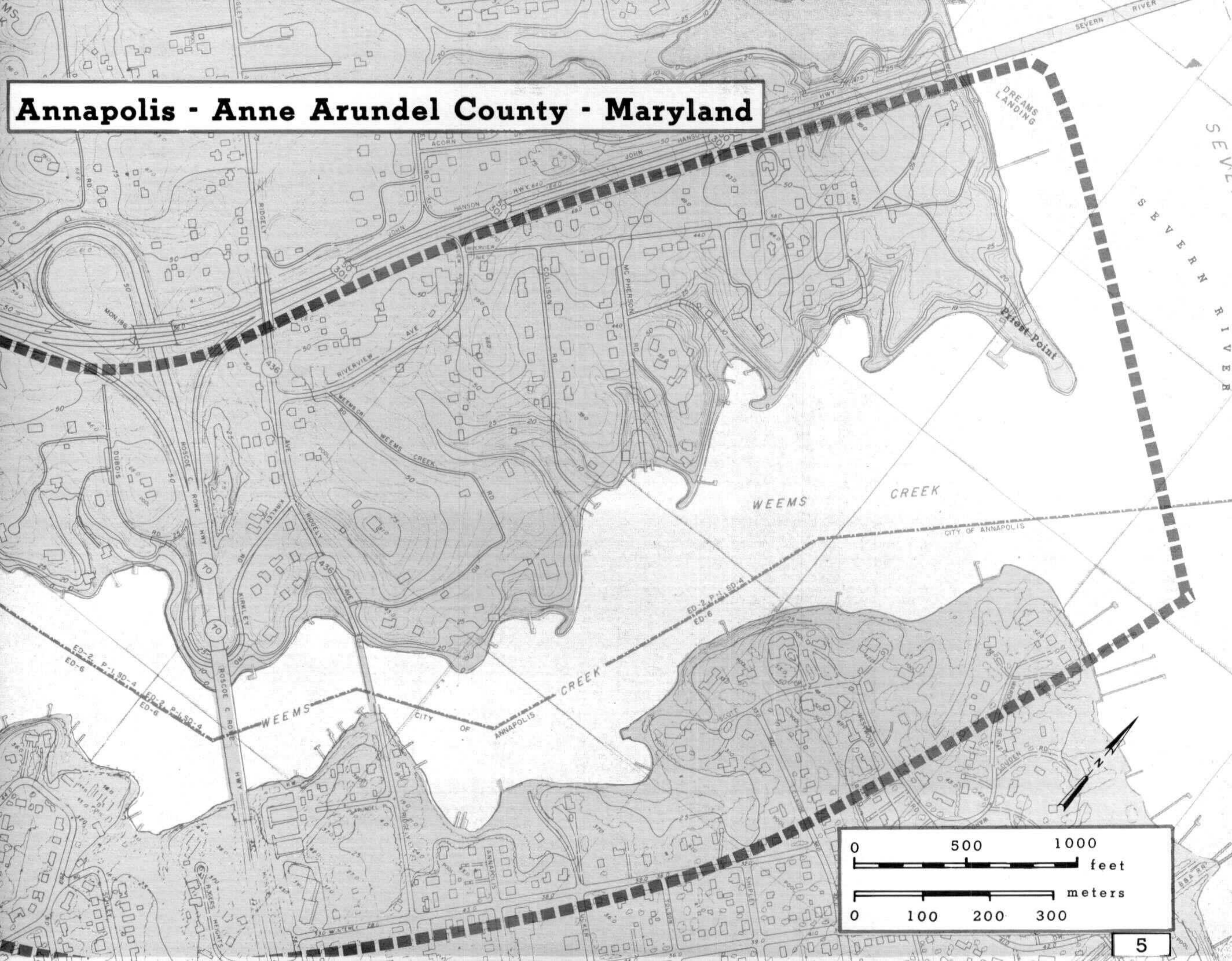
*NOTE: It is important to note that the contents of this report and the participation of the National Park Service in this technical assistance project do not necessarily represent the views or policies of the Secretary of the Interior.*

# WEEMS CREEK STUDY AREA





# Annapolis - Anne Arundel County - Maryland



# Section I - SUMMARY OF MAJOR FINDINGS

## Resource Assessment

1. The relatively undeveloped and undisturbed natural resources on Weems Creek must be considered and appreciated in the context of the Creek's location, within the urban and suburbanizing jurisdictions of Annapolis and Anne Arundel County and within the commuting distance of Baltimore and Washington, D.C.

2. As a tidal estuary of the Chesapeake Bay and a tributary of the Severn River, Weems Creek shares many of the notable characteristics and features of these two water bodies. These include: the brackish marsh wetlands; the upland deciduous oak and hickory woodlands; the steep slopes, bluffs, and scalloped inlets along the shorelines; the diversity of terrestrial and aquatic wildlife; and the navigability of its waterway.

3. Regarded as a "living science museum," and recognized by the Maryland Uplands Natural Areas Study, the Hock Property is the most significant undeveloped single property on Weems Creek. Efforts should continue to retain the property in its present natural condition.

4. With its Class II Water Quality rating, the Creek offers many recreational opportunities including boating, swimming, fishing, crabbing, and the sheer scenic pleasure of living "on-the-water."

5. The Confluence Area (from the mouth of Weems Creek to Ridgley Avenue Bridge) and the Hock Property Area (from the headwaters of the Creek to Rowe Boulevard Bridge) are two distinctive geographic areas meriting equal amounts of conservation attention.

6. As a tributary of the Severn, a State Scenic River, Weems Creek could be accorded special management consideration by Annapolis and Anne Arundel County.

7. A notable majority of landowners who were interviewed through the Attitudinal Survey feel that the Creek should be conserved for future generations.

## Resource Issues

1. Under the separate jurisdictions of Annapolis and Anne Arundel County, Weems Creek is not viewed as a single, unified entity, but rather as two separate areas under the control of uncoordinated regulations and monitoring practices. This bifurcation has led and could continue to result in disjointed conservation efforts.

2. On the county side--the least developed side of the corridor--residential development could leap four times the current number if maximum levels of current county zoning are realized.

3. The headwaters show notable levels of sedimentation and runoff, caused in part by poorly monitored sedimentation and runoff regulations on the city-side. Ongoing industrial development in the Headwaters Area poses a serious threat to the water quality of the Creek in the absence of strictly enforced regulations.

4. Eroding slopes and inlets are visible throughout the Creek. There are no effective prohibitions against building on slopes over a certain percentage. Boat wakes take their toll on the shoreline in spite of the six knot speed signs.

5. There are no buffer zones between wetlands and developed areas of the shoreline, increasing the vulnerability to erosion and runoff of these highly sensitive land-water interfaces.

6. Prominent visual blights in the waterway and corridor are: turbid water quality in the headwaters; sewage discharge from boats; broken glass and litter underneath Rowe Boulevard Bridge; and those single and multi-family residences which dominate the natural topography. In the absence of height restrictions, the construction of highrise buildings in the commercial zones on the county-side could eliminate the semi-rural quality of the creek.

## Resource Options

1. Local landowners must play a major role in conserving Weems Creek. This commitment is particularly crucial now given the significant decrease in government funding for natural resource studies, land acquisition, and environmental management. On the local level cutbacks in environmental programs mean that fewer staff may be available to monitor existing, not to mention, additional regulations.

2. Local landowners realize that their participation is critical. Results from the Attitudinal Survey show that individual landowners perceive that they, the Weems Creek Conservancy, and the neighborhood associations, should be the most responsible partisans undertaking conservation efforts on the Creek.

3. Options which can be tailored to individual and collective landowner actions are: conservation easements, a land trust, mutual covenants, a variety of education projects including monitoring activities, and participation in an advisory capacity on a special district advisory board.

4. The city of Annapolis and Anne Arundel County could coordinate their separate regulations and land use controls and work together to jointly designate Weems Creek as a special protection district. Unified by one set of land use guidelines Weems

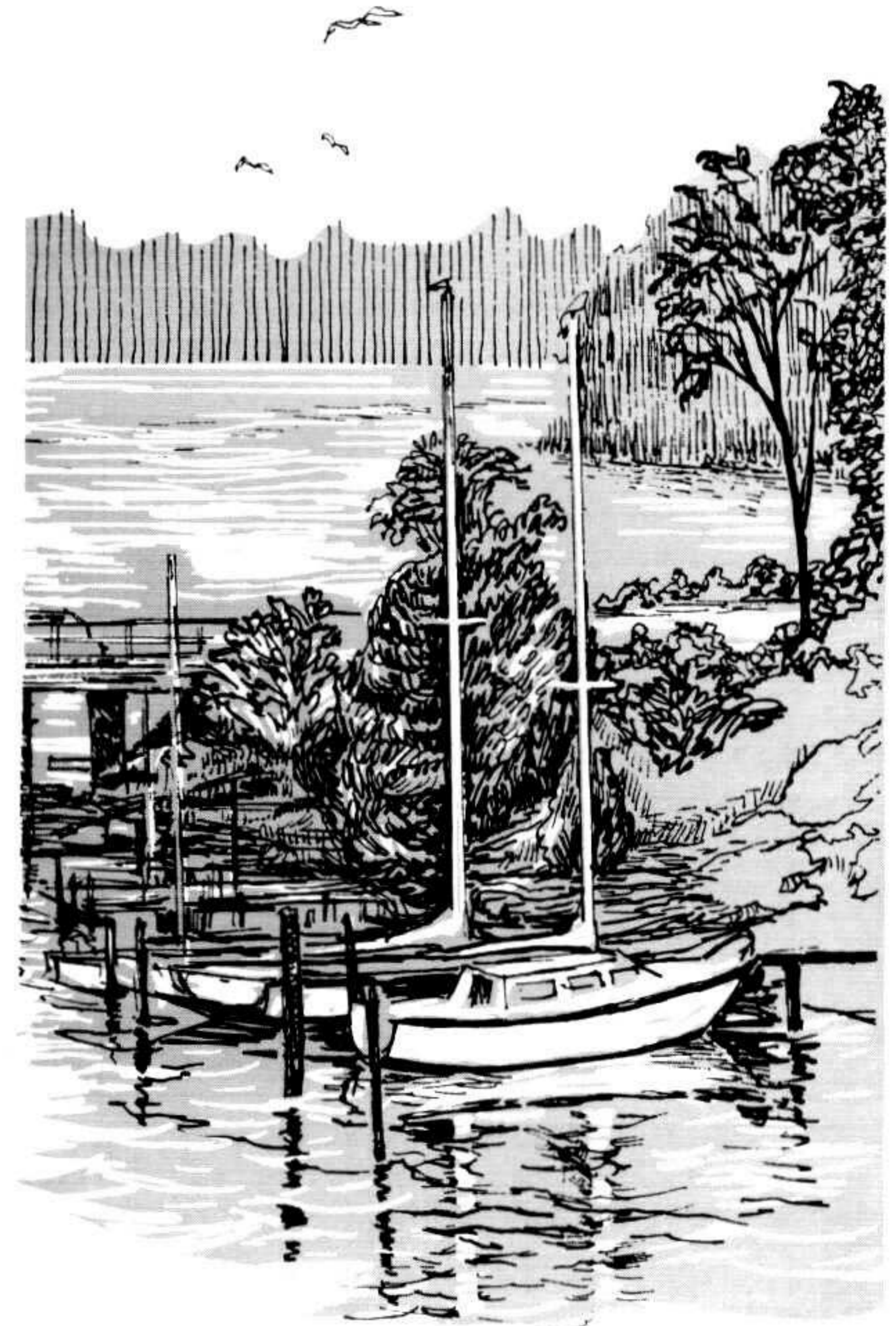
Creek could be assured that its high scenic and natural resources are uniformly protected on both sides of the waterway. This action would lead to the recognition of the Creek as a single physical, social, and ecological unit.

5. A jointly designated special protection district could be precedent-setting in Maryland, as there are no other joint designations between split jurisdictions in the rest of the State. As such, the district must be set up in such a way that it does not constitute exclusionary zoning or a taking without just compensation. It should also work within the framework of the development needs of the city and county.

6. The city and county could independently reevaluate their current zoning and subdivision regulations to better protect the natural features of Weems Creek and other shoreline environments within their jurisdictions. Options to consider are: buffer zones, setbacks, prohibition of development in certain areas such as steep slopes and floodplains, scenic viewsheds, performance zoning, and density transfers. (See "Special Protection District" Option)

7. There are existing programs within the State government which could address many of the issues threatening different resources. These programs include: the Water Quality

Monitoring Division of the Department of Health and Mental Hygiene; the Urban Stream Restoration Program, the Save Our Streams Program, and the Scenic Rivers Program in the Department of Natural Resources; the Forest Conservation Management Program in the Forest Service; and the Maryland Environmental Trust.



# Section II - INTRODUCTION

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## Background and Purpose

This report is the result of a cooperative work agreement among the National Park Service, the Weems Creek Conservancy, and the State of Maryland Department of Natural Resources. The National Park Service undertook the study in March, 1981, in response to a request by the Maryland Department of Natural Resources and the Weems Creek Conservancy.

Members of the Conservancy, representing five neighborhood citizen associations around Weems Creek, were vitally concerned about the future of their relatively unspoiled and undeveloped waterway and corridor in a rapidly developing City of Annapolis and Anne Arundel County. Waterfront development on neighboring Spa and Back Creeks generated concern that Weems Creek could also quickly lose most of its natural resources and semi-rural qualities. The Conservancy sought out planning assistance from the State Department of Natural Resources and the National Park Service to give them clear signs and directions for how to continue pursuing their conservation goals. They also wanted an outside assessment of the resources themselves and a clearer understanding of how local landowners regard these resources.

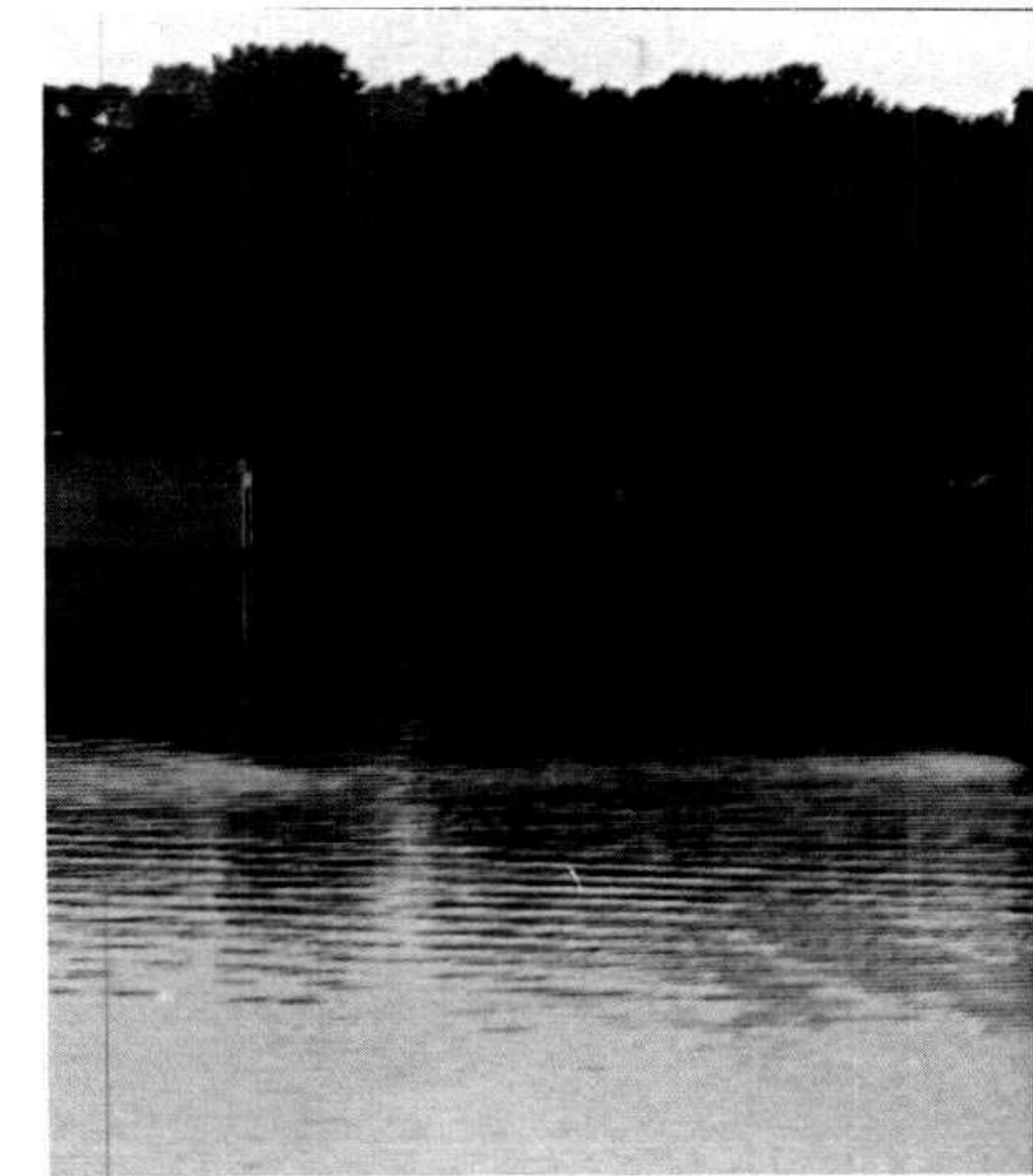
The Weems Creek study has four objectives. The first is to assess the characteristics and qualities about

Weems Creek which make it special. These include its natural resources and the many opportunities they offer landowners and visitors to the Creek. The second is to analyze those threats that now and in the future could impinge upon these resources and diminish their environmental, recreational, aesthetic, and social functions. The third is to understand how landowners themselves feel about the significance of the Creek and their level of commitment to helping conserve it. The fourth is to set forth a series of options which address the needs of the resources, the issues threatening them, the attitudes of the landowners, and which provide alternative paths which the Conservancy could take in their conservation efforts.

## Role of the National Park Service

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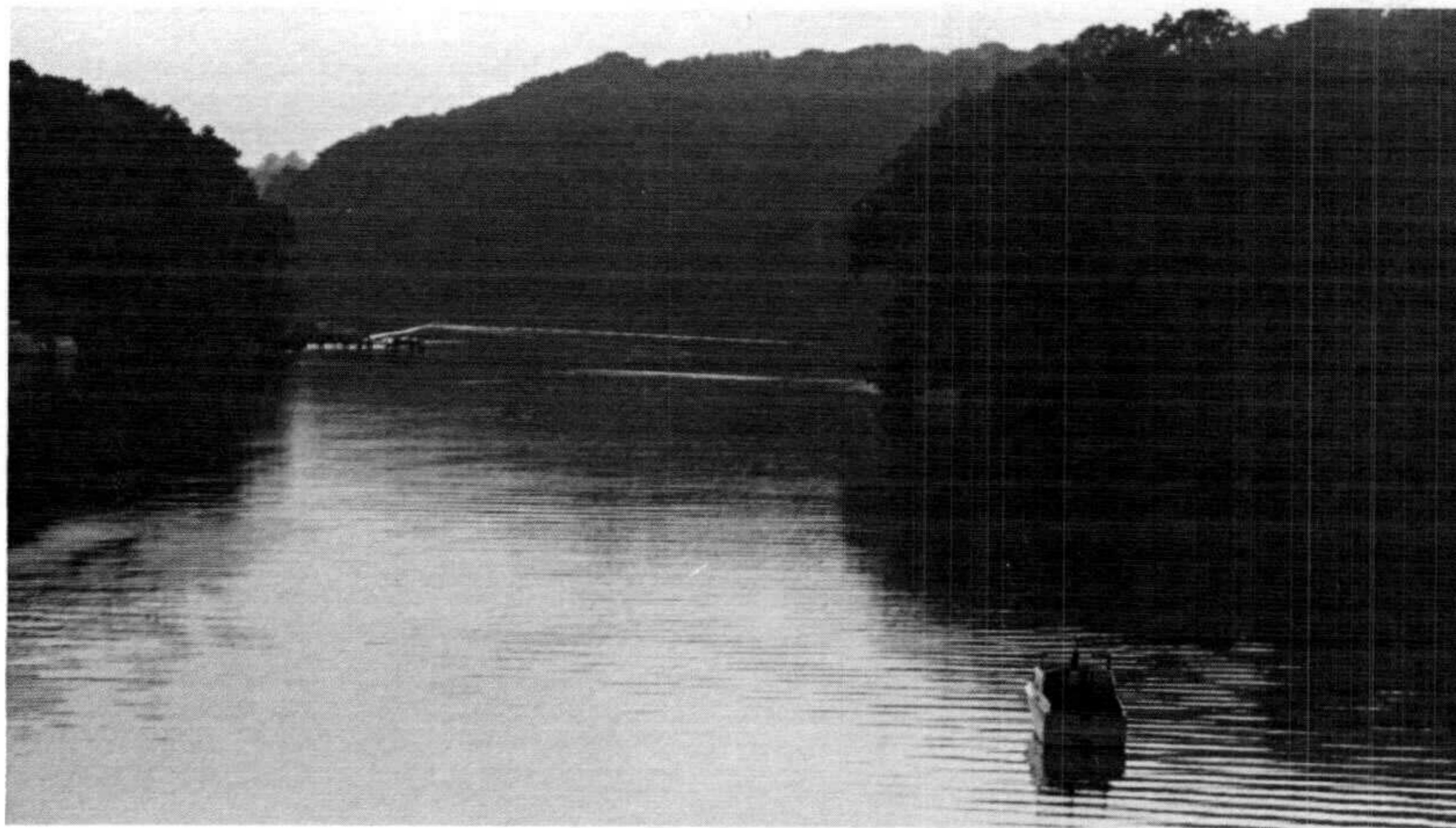
The National Park Service agreed to participate in this study, regarding it as an opportunity to demonstrate ways by which the public and private sectors could share the responsibility of working towards the attainment of conservation goals. Another reason for its participation is to encourage ongoing conservation efforts of the Weems Creek Conservancy and the State of Maryland.



The State, in accordance with the policies of its State Wild and Scenic Rivers Act, is currently preparing a resource assessment and management alternative study for the entire Severn River Watershed. To the extent possible, the National Park Service hopes that this report will support and complement the State's endeavors to protect and conserve its significant waterways.

# Section III - RESOURCE ASSESSMENT

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## Introduction

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The resource assessment looks at the many characteristics, qualities, and attributes of Weems Creek which make it a special place to live. It points out those areas which merit attention by those concerned with the conservation of the Creek and it describes the significant aspects of selective features in the waterway, along the shoreline, and in the upland areas of the corridor. Thus

the Creek is assessed both as a whole and in parts. The opportunities it provides and a summary of its history are also included. Of special note are the characteristics of the landowners themselves and many of their attitudes about conserving the Creek.

The assessment is based on both the observations of the National Park

Service, and the comments and attitudes of local landowners who took part in the Weems Creek Attitudinal Survey which the Weems Creek Conservancy conducted in June and July, 1981. Much of the information came from already existing published or unpublished city, county, state, and private consultant planning studies and research, as well as from on-site field work undertaken by members of the Conservancy.

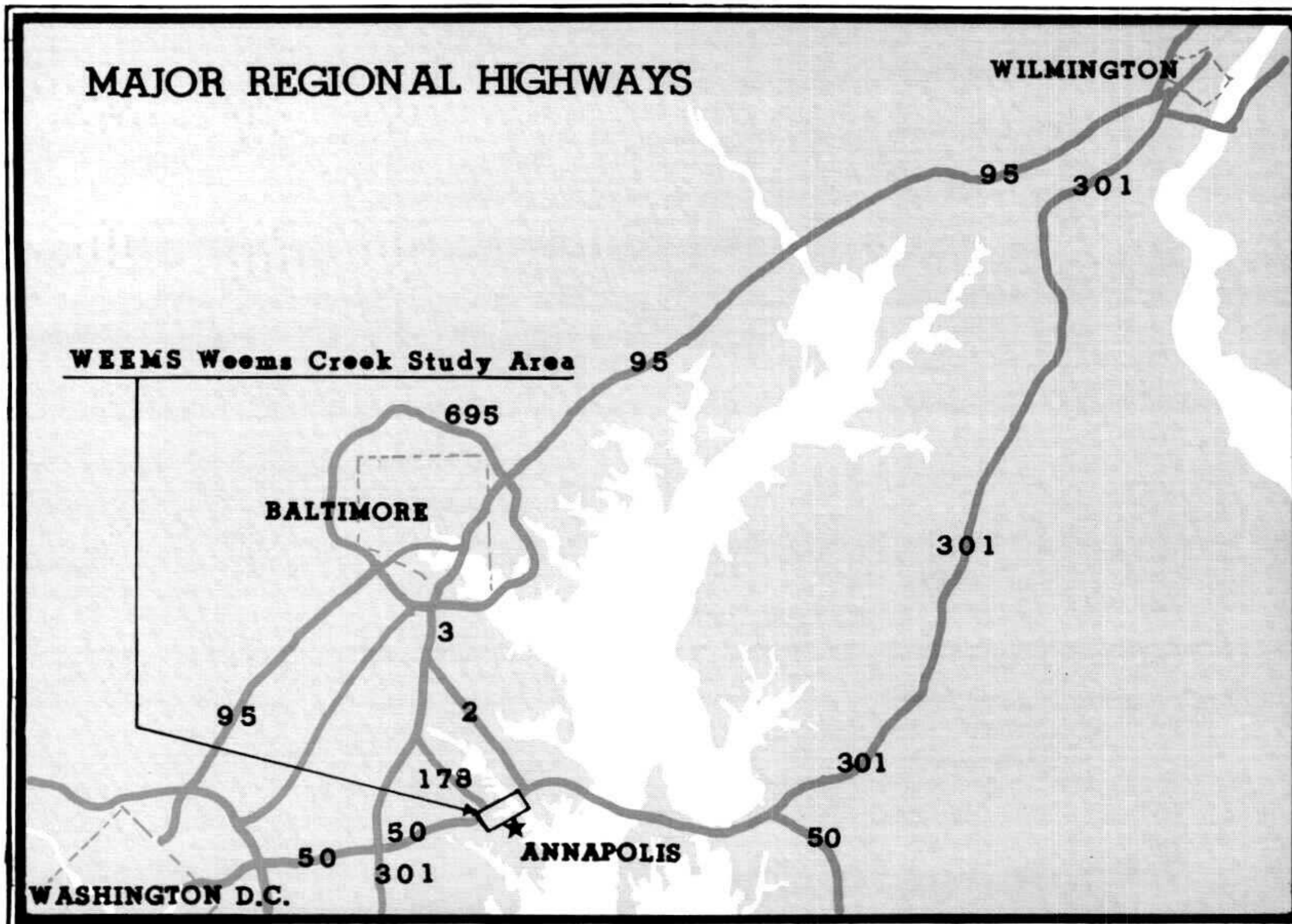
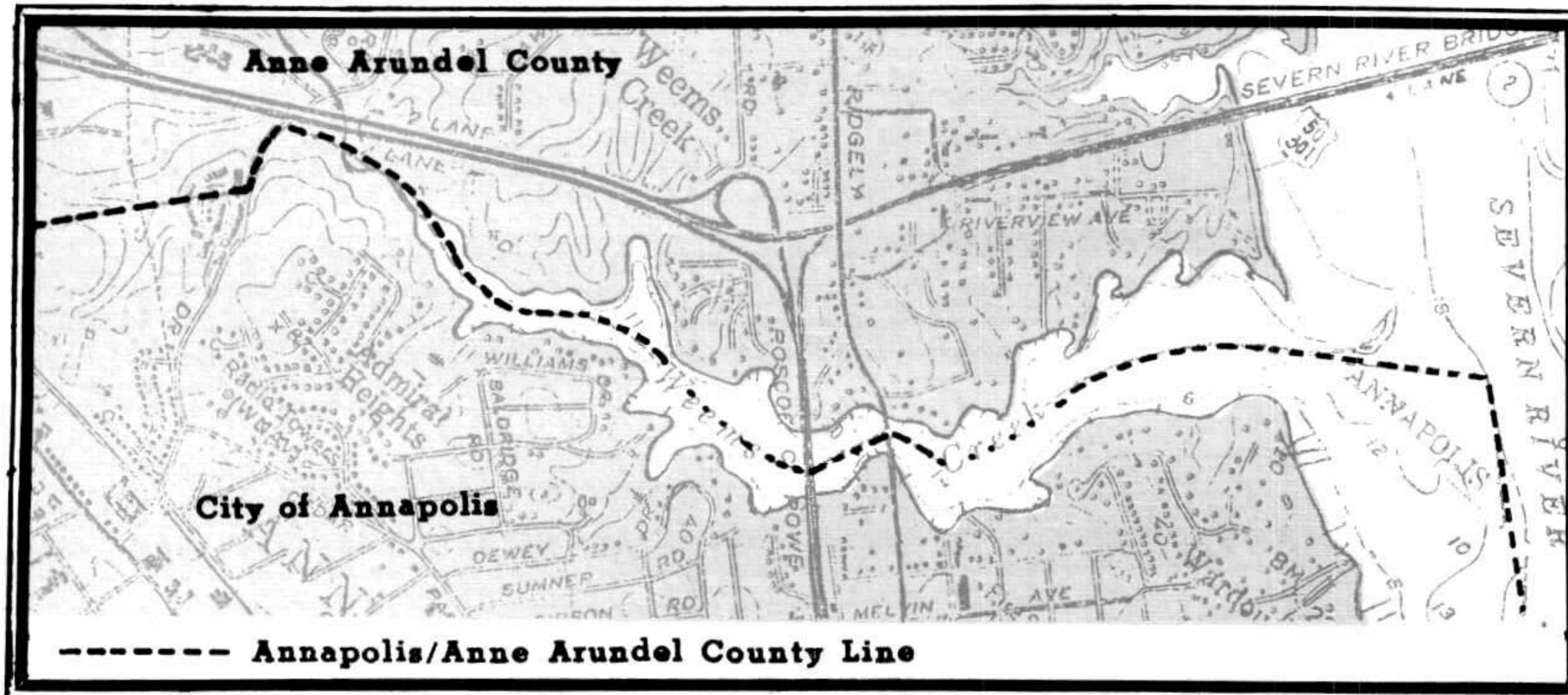
Although the assessment indicates those aspects of the Creek which have state-wide significance, it stresses the even greater significance of analyzing the Creek from the perspective of an urbanizing county and already developed city. Without placing this assessment in the urban and suburban context of developing waterways in the Severn, the importance of the resource might be lost. As one among many tidal estuaries of the Chesapeake Bay, the Creek may not appear to be particularly unique. But as the only relatively unspoiled waterway in Annapolis, within close proximity to Baltimore and Washington, D.C., the Creek is indeed special. Today it offers many attractions and opportunities for its landowners and for visitors which in many parallel locations and places are rapidly disappearing.

## Regional Location

Located within both Annapolis and Anne Arundel County, Weems Creek is within close proximity of major East Coast cities including Wilmington, Baltimore, and Washington, D.C. Residents on Weems Creek are within commuting distance of Baltimore and Washington, D.C.

Weems Creek is 91 miles from Wilmington; 30 miles from Baltimore; and 34 miles from Washington. Route 50/301 near the northern side of the Creek is one of the major access routes linking Annapolis with Washington, D.C., the Eastern Shore, and Wilmington. Two other major highways, Route 2 and Route 178, facilitate commuting between Annapolis and Baltimore.

In the Attitudinal Survey several landowners indicated that the location of Weems Creek in terms of its accessibility to Baltimore and Washington, D.C. was critical in their decision to move to Weems Creek. Some landowners indicated that the access to Route 50/301 was a quality about Weems Creek which was important.



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## Rural, Undeveloped Attributes

Weems Creek is the only remaining relatively undeveloped creek in Annapolis. Landowners on Weems Creek still live in a relatively rural environment, yet benefit from the many services provided by Annapolis and by Anne Arundel County.

Of the four creeks in Annapolis, Weems Creek has undergone the least amount of residential growth. Especially in contrast to Spa and Back Creeks, which over the past ten years have experienced a high degree of residential and marina development, Weems Creek has retained its rural, quiet, relaxed, scenic qualities. There is no commercial development on the Creek.

On the city side of the Creek, what is now West Annapolis and Wardour was first subdivided in the late nineteenth century. But as late as 1939, the area which is now Admiral Heights was primarily a single tract on which tobacco farming was conducted. The storage of housing after World War II led to further subdivision and development of the southern shore. Like the city-side, the county-side was subdivided and built upon largely in response to the housing shortage after World War II. Up to 1860 only one house could be seen on the northeast side of the Creek. In the late 19th century plots from the largest single tract on the northern shore had been laid out and were being rented for truck farming. An

estimate of the 1980 population of the Weems Creek Watershed is 3,388, including 3,065 on the city side and 323 on the county side. In 1980, the population of Annapolis was 31,740 and the population of Anne Arundel County was 330,775.

The rural, undeveloped qualities of Weems Creek were consistently noted by landowners in the Weems Creek Attitudinal Survey which was conducted during June and July 1981. In response to the question, why did you move to Weems Creek, many landowners revealed that they settled there

because of the low population density, relatively undeveloped state, relaxed quality of life, privacy, and nearness to yet separation from Annapolis. These qualities were strongly revealed in answers to the question, what qualities about the Creek are important to you? Those qualities which were most frequently mentioned are: the Creek's undeveloped/rural corridor; its cleanliness and absence of air and noise pollution; its privacy; its rural environment with proximity to Annapolis and urban services; its absence of crime; its peacefulness; and its "unspoiled nature."



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## Tidal Estuary

As a tidal estuary of the Chesapeake Bay and a tributary of the Severn River, Weems Creek shares many of the natural features of its two related water bodies.

### Physiography

Weems Creek is part of the West Chesapeake Basin and is completely within the Atlantic Coastal Plain.

### Geology

Like much of the Severn River Basin, Weems Creek is underlain by a thick, wedge-shaped massive sedimentary deposit called the Aquia Formation. Extending to a thickness of 180 feet in places, and comprised of large amounts of glauconite, this deposit is very firm and largely unweathered.

### Topography

The influence of the geology on the landform around the creek can be seen in the bluffs at its mouth and in the steep slopes (between 15 to 40%) surrounding the Creek. These bluffs and slopes typify much of the topography of the Severn River Basin.

### Soils

Many of the soils within the corridor are part of the Monmouth-Collington Association. These developed in sediments containing glauconite. They are nearly level to very steep, well-drained, fine sandy loams.



### Vegetation

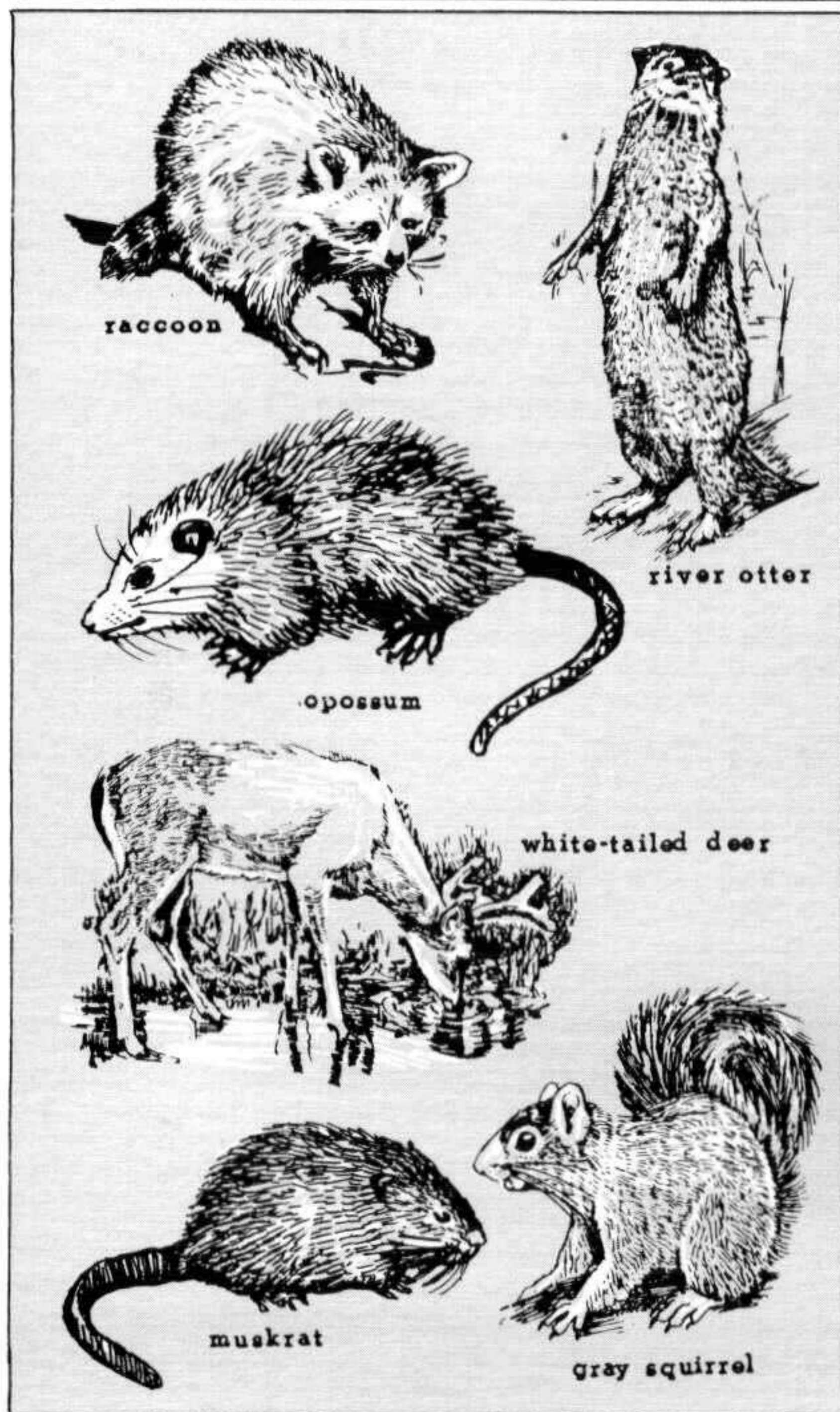
The vegetative communities within and around the Creek are characteristic of biotic communities of the Chesapeake Bay. The major aquatic ecosystem within the Creek is the brackish marsh community which develops in the transition zone between freshwater and salt marshes. Species found in Weems Creek such as saltmeadow cordgrass, which typically dominate in well drained soils adjacent to creek borders, and groundsel and marsh elder, which are found in more elevated drier areas, are common to brackish marsh areas throughout

the Chesapeake Bay. Upland deciduous species such as oaks and hickories, which are in the upland areas along the Creek, especially in the Hock and Priest Point properties, are dominant species in the Chesapeake Bay region. Some ecologists believe the climax species of the area is an Eastern Oak-Hickory Forest.<sup>1</sup>

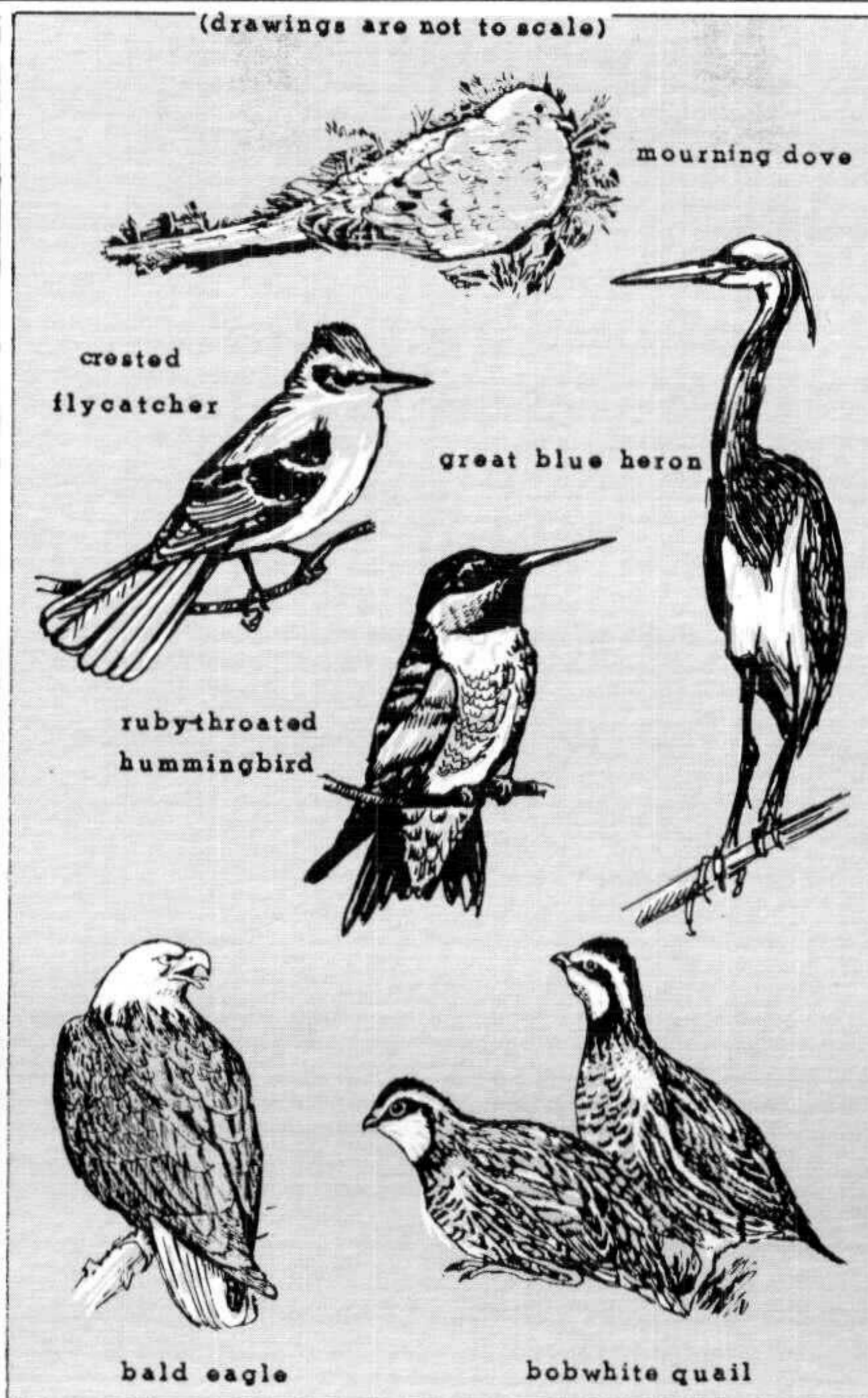
<sup>1</sup>Gary S. Waggoner, "Biotic Communities of the Chesapeake Bay Region, Appendix B. Natural Areas of the Chesapeake Bay Region: Ecological Priorities. Center for Natural Areas, Smithsonian Institution, June, 1973.



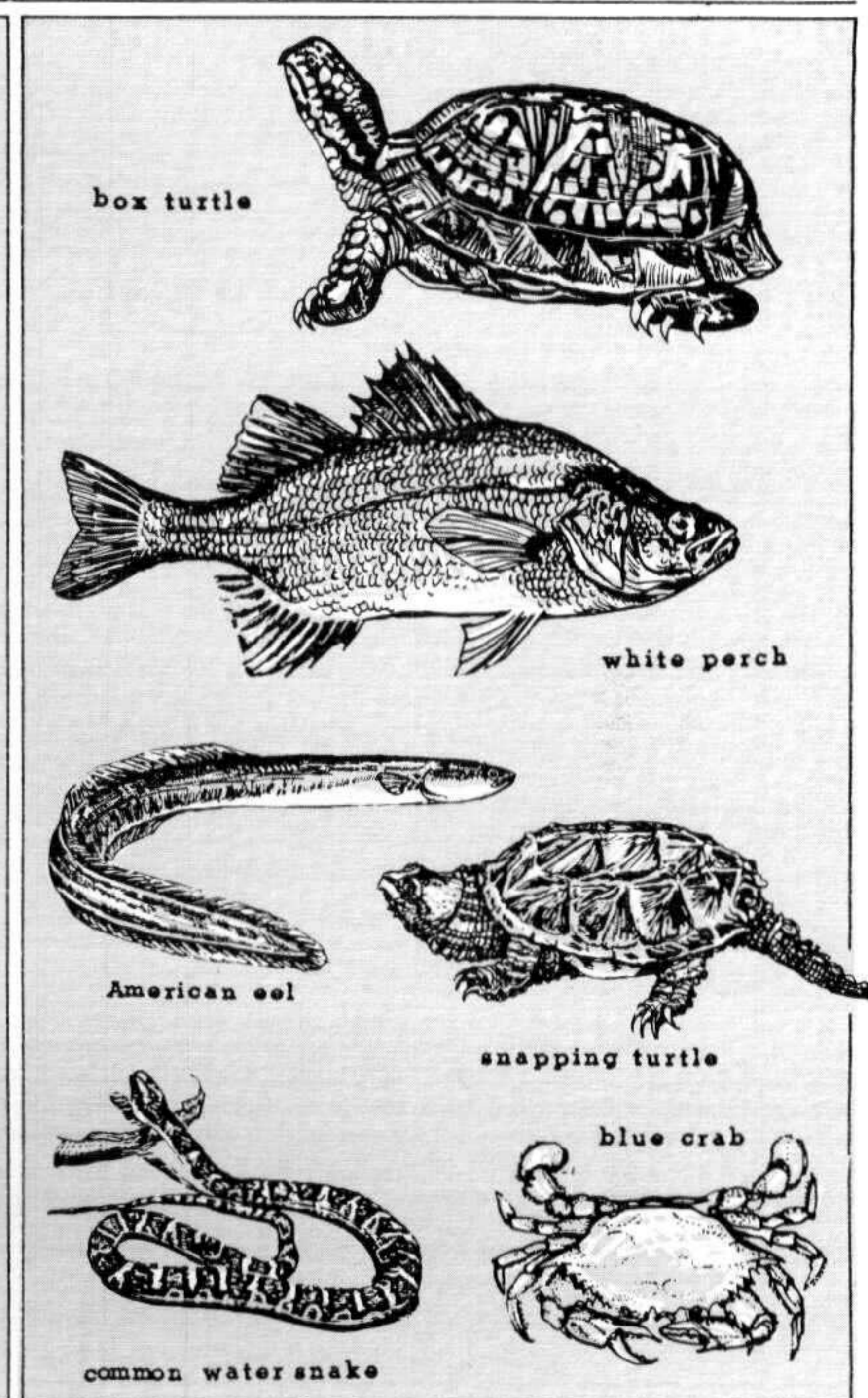
MAMMALS



BIRDS



REPTILES - AMPHIBIANS - FISH



There is a diversity of mammals, birds, reptiles, amphibians, and fish, which have habitats in the upland, within the creek corridor, and in the vegetation along the edge of the Creek, in its wetlands and in its waters. Mammals include: river otter, opossum, gray squirrel, muskrat, raccoon, and an occasional white-tailed deer. Among the birds breeding locally are the green heron,

mallard, bobwhite quail, mourning dove, woodpecker, and crested flycatcher. One of the most notable summer residents is the great blue heron. Some of the winter residents are the canvasback, gull, brown creeper, and slate-colored junco. There are a few migrant birds including the American bittern, bald-eagle, and ruby-throated hummingbird. Reptiles and amphibians include a

variety of snakes, the common snapping and Eastern box turtles, and the American toad. Among the fish population are the American eel, white perch, pumpkinseed and bluegill sunfish, minnow, and crab.<sup>2</sup>

<sup>2</sup>Elizabeth McWethy and Jules Bigio, "Checklist of Flora and Fauna on Weems Creek."

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## Hock Property and Priest Point

Highly significant to the ecological and scenic character of Weems Creek are two large wooded tracts, the Hock Property and Priest Point, which are both on the county side. The Hock Property, 30 acres of upland deciduous forest near the headwaters, was recognized in 1975 by the Maryland Uplands Natural Areas Study as a "significant and unusual water-land interface" and as a "plant community of unusual age or maturity." Priest Point, a 17 acre deciduous wooded area at the mouth, contains a diversity of native plant species.

### Hock Property

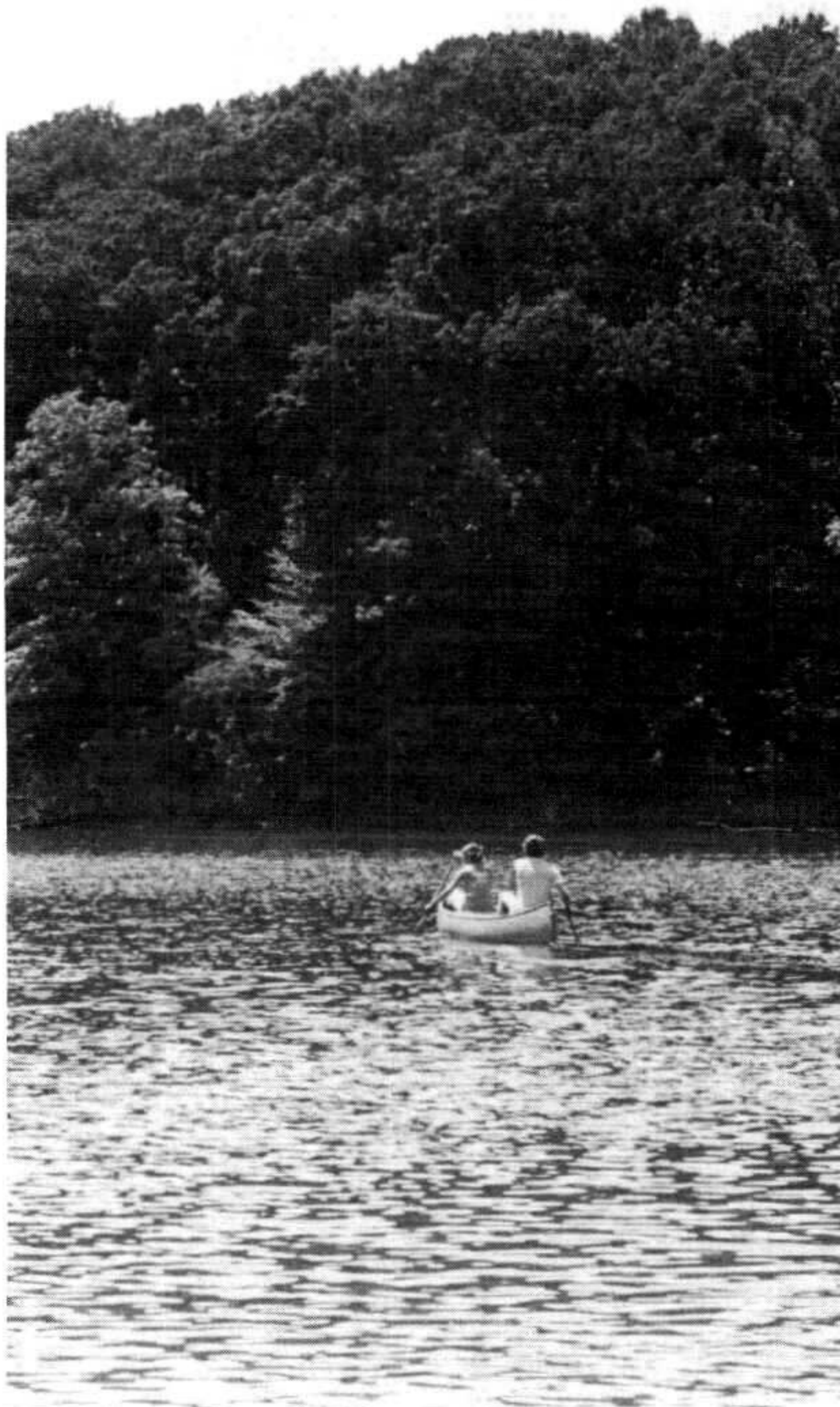
Called a "living science museum" in the Maryland Uplands Natural Areas Study, the Hock property is the Creek's most distinctive single property. More than any other tract, the property gives the Creek its rural quality and contributes to a feeling of isolation and remoteness amidst an expanding Annapolis to the south, a developing county to the north, and a continuously traveled highway corridor, Route 50, adjoining the property on its north side. The tract is particularly special to the residents of Admiral Heights who look onto it from their homes on the city-side and to landowners adjacent to it on the county-side.

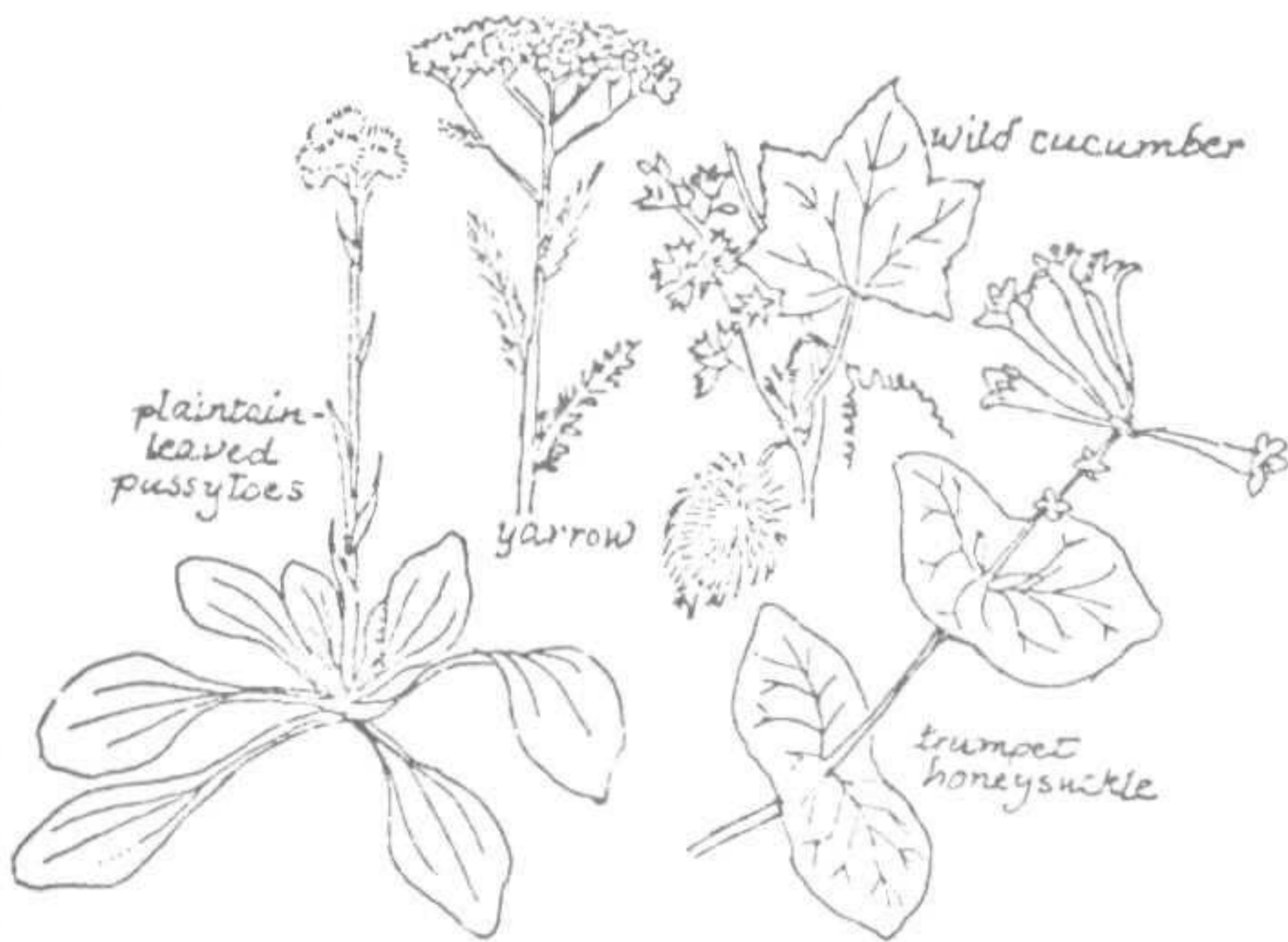
In the Attitudinal Survey the Hock property was recognized more than any other single property or area as

being of high scenic/aesthetic value, high wildlife value, and high plant value. The Hock property was also noted as the only remaining vestige of the original land grant near Annapolis. Two landowners indicated that they moved to Weems Creek because of the wooded shoreline, as exemplified by the Hock property. The tract is composed of an interplay of deciduous canopy, understory, shrub, and herbaceous layer. In the interior, the woods are dominated by tulip poplar along with a variety of oaks and hickories. Along the steeply sloping shoreline, the vegetation in the canopy is primarily chestnut oak along with other oaks and hickories. Dogwood recurs throughout the understory along with American holly in the interior. The shrub layer includes greenbrier, shadbush, maple-leaved viburnum, huckleberry, and blueberry.<sup>1</sup>

An on-site visit to the property by a number of the Weems Creek Conservancy revealed a profusion of species in the herbaceous layer. These include: purple vetch, may apple, broad-leaved arrowhead, hedge binweed, downy rattlesnake-plantain, indian pipe, blood root, rue-anemone, field pansy, spring beauty, bladder campion, bouncing bet, mullein pink,

<sup>1</sup>Rogers and Golden, Maryland Uplands Natural Areas Study. Coastal Zone Management Program, Department of Natural Resources, 1975.





yarrow, boneset, wild carrot, angelica, wild cucumber, plantain-leaved pussytoes, showy orchis, wild geranium, cardinal flower, trumpet honeysuckle, larger and slender blue flag, spiderwort, blue phlox, and blue-eyed grass. Growing in the inlet adjacent to the eastern boundary of the property is a wetland population of cattails and salt water grass.<sup>2</sup>

The diverse vegetation provides an excellent wildlife habitat for mammals, reptiles, amphibians, fish, and birds, including a recently spotted white-tailed deer, pair of bald eagles, and a large school of minnows. Pleasure fishing and crabbing and some limited commercial crabbing are conducted off its shores, as evidenced by the presence of marked crab pots.

<sup>2</sup>Elizabeth McWethy, On-Site Visit, May, 1981.

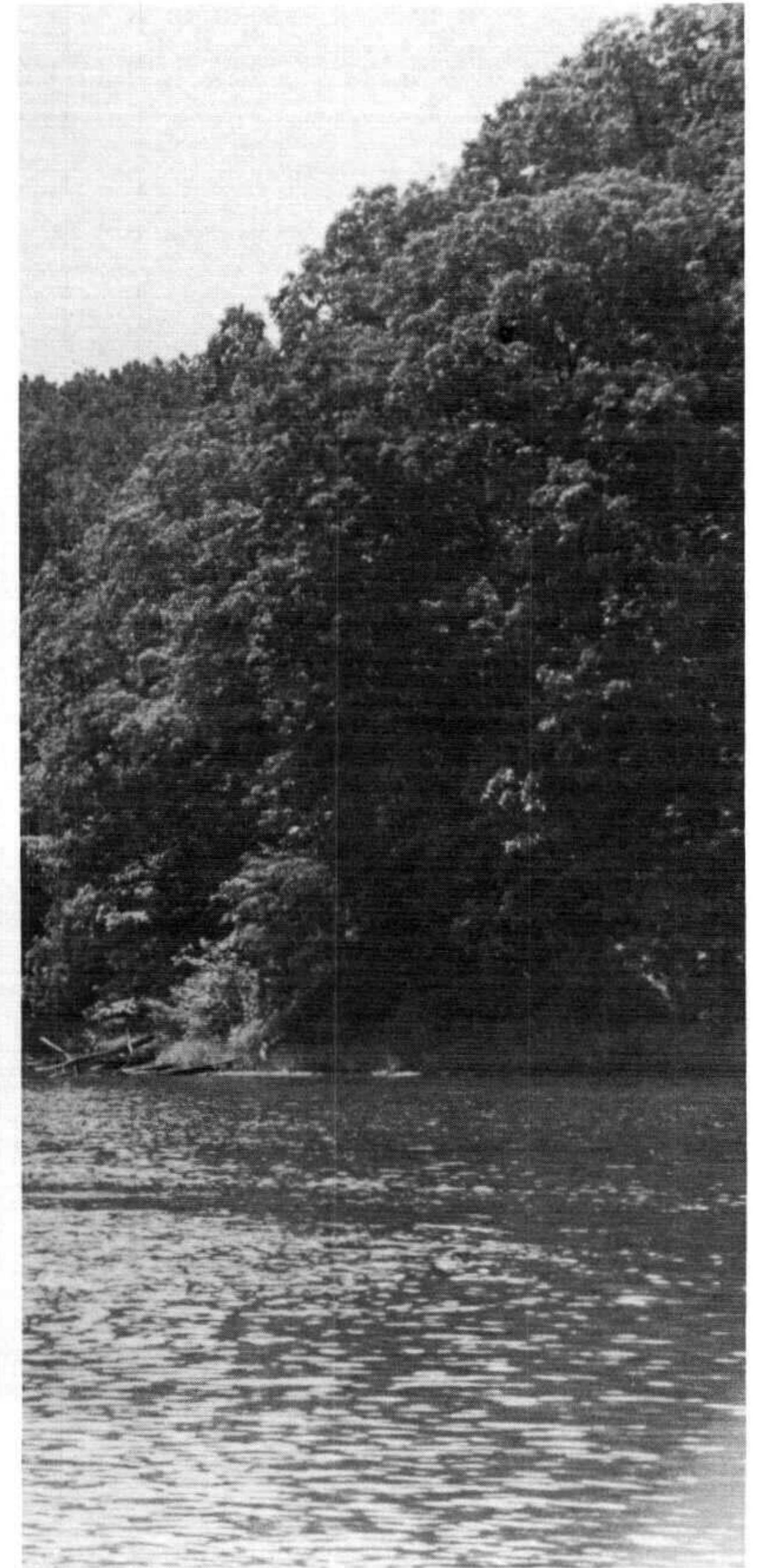
The soils along the shoreline are steeply sloping (between 15% and 40%), highly erodible Collington (CoE) and Monmouth (MvE) fine sandy loams. Tidal Marsh soils (Tm) occupy the southwest corner of the property. These soils have severe limitations for all kinds of development, including residential and recreational use. The upland soil, a Collington fine sandy loam (CoC<sub>2</sub>) with slopes between 5% and 10%, is less erodible and has some suitability for limited recreation, including tenting and hiking.<sup>3</sup>

The greatest disturbances to the property are noise from the highway and some windthrow on the tract.

Owned by the State Highway Administration (SHA) for many years, the property was identified as a scenic land project, and recorded as a "right of way for scenic purposes" in August 1973. At present it appears that SHA would prefer not to transfer title to another State agency. SHA has indicated it would like to retain the property in its natural state.

The tract has been zoned by Anne Arundel County as an open space district and has also been identified in the Land Use Plan, Map No. 1, of the General Development Plan as an open space and recreational area.

<sup>3</sup>Soil Survey of Anne Arundel County, Maryland, U.S. Department of Agriculture, Soil Conservation Service, February, 1973.



## Priest Point

As the dominant property on the northeast corner of the Creek, Priest Point gives the boater entering the waterway from the Severn his first clue that the Creek is more than just an on-the-water residential community. Priest property is a retreat for priests in the Redemptorist Order and a natural preserve area. Only a small part of the property has been developed with a caretaker's house, a swimming pool, and a few cabins.

Most of the property remains in its natural state. Groves of tulip poplar, oak, hickory, and black walnut extend throughout the open space areas, punctuated by open fields. Older hardwood trees grow along the steep banks while some of the groves appear to have second growth. There are more than a dozen very large oak trees. Among the oak species are white oak, chestnut oak, black oak, red oak, pin oak, burr oak, scrub oak, and chinquapin oak. Among the hickories are pignut and butternut. There are a profusion of other canopy and understory species which include: silver maple, elm, sycamore, red ash, white ash, ailanthus, red cedar, mulberry, shadbush, tupelo, chokecherry, catalpa, redbud, hackberry, sassafras, box elder, and dogwood.<sup>4</sup>

<sup>4</sup>Elizabeth McWethy, On-Site Visit, September, 1981.

The soils along the shoreline, except for the point itself, are similar to those along the shoreline of the Hock property. They are Collington fine sandy loam (CoE) with slopes of between 15 and 40 percent. Highly erodable, they are severely limited to any kind of development, including general recreational activity. The soil on the point itself consists of cut and fill land (CuB) from 0 to 5



percent slope. The Collington fine sandy loam (CoB2) in the interior is less erodable and offers more potential for residential development and recreational use.<sup>5</sup>

In the Attitudinal Survey, Priest Point was recognized as providing those qualities which make the Creek a special place to live. These include: an undeveloped, rural "unspoiled" character; notable upland vegetation; large groves of trees; and an area of high scenic/aesthetic value and high plant value. The Point is also important as a spawning ground for fish and crab.

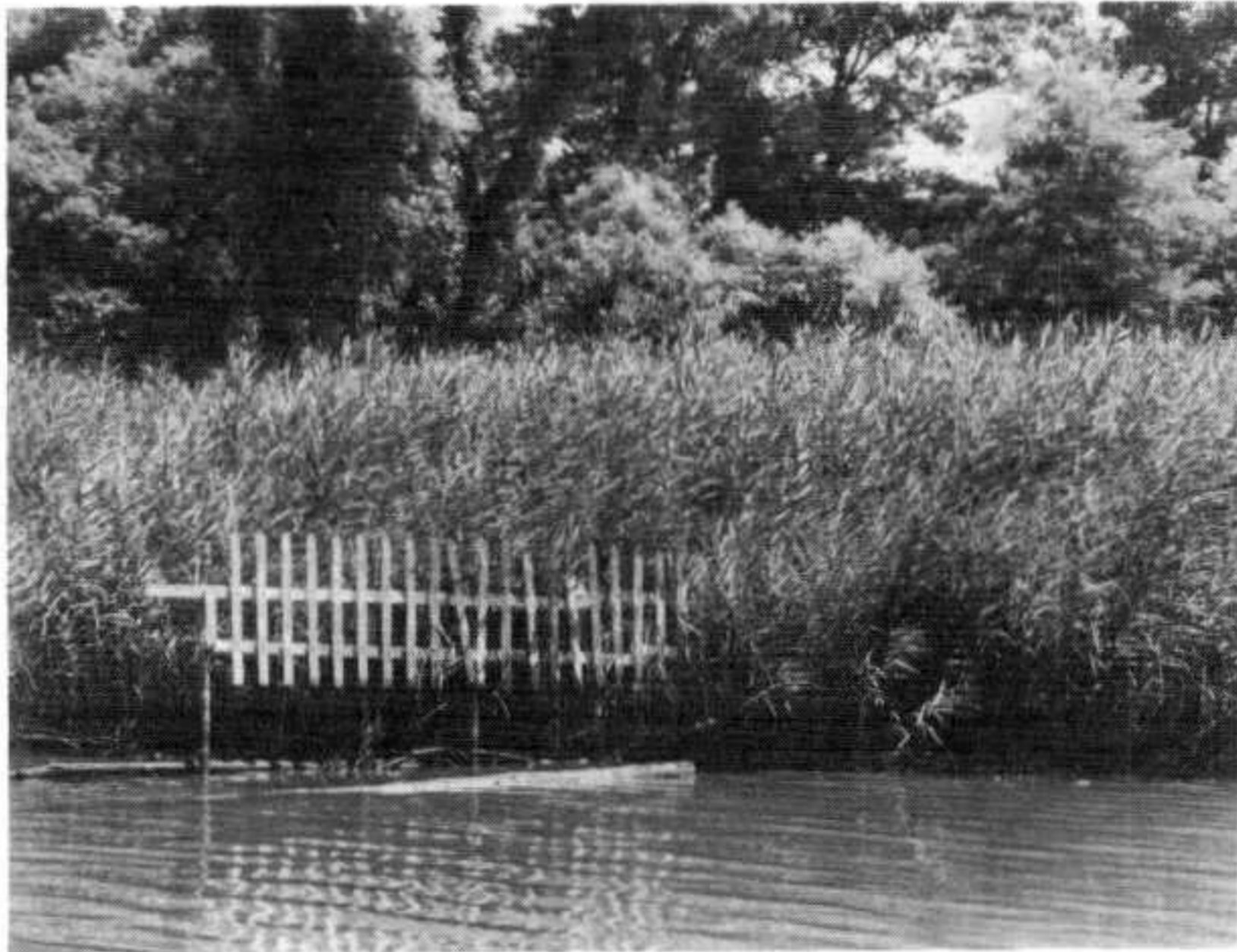
<sup>5</sup>Soil Survey of Anne Arundel County, Maryland.

Priest Point is owned by the Redemptorist Order whose headquarters are in Ireland. Based on a recent discussion between a member of the Weems Creek Conservancy and the new caretaker of the property, it seems likely that the Redemptorist Order will want to retain the land as a recreational retreat. Because it is used for recreational purposes, the Order pays taxes on it.

Under the current Anne Arundel County Zoning Regulations, the property is zoned as an Open Space District which permits conservation uses, practices and structures for the maintenance of the natural environment and existing residential uses. On the Existing Land Use Map, Map No. 2 of the County's General Development Plan, April 1977, the property is designated as "institutional." In contrast to the zoning, however, is the Land Use Plan, Map No. 1 of the General Development Plan, which in September 1978, targeted the property for low to medium residential development (2-5 units per acre).

# Wetlands

The wetlands of Weems Creek are important to its ecology and scenic character. They help to purify the water, provide habitats for diverse wildlife and vegetative species, buffer the wake of wave water, and offer recreational opportunities to local landowners.



The Wetlands Division of the State Water Resources Administration identified in a 1970 aerial photo survey six emergent wetland areas around Weems Creek. Three are in the Hock Property Area; and three are in the Confluence Area, between the Severn and Ridgely Avenue bridge.

Because Weems Creek is a tidal estuary whose salinity varies based on a variety of factors including amount of precipitation, the species composition of the wetlands is subject to change. A unique aspect of the Creek's transitional status

between a saltwater and a freshwater environment is the variety of species in the wetlands and along the Creek's edge. Typical of brackish high marsh species are those found in the Creek's wetlands. They include: salt water grass, salt meadow grass, cattails, and groundsel tree.<sup>1</sup> In addition there occurs red maple, ash, common reed, saltmarsh bulrush, arrow arum, pokeweed, marsh mallow, and rose mallow. Among the herbaceous plants along the river's edge are: white boneset, broad-leaved arrowhead, blue-eyed grass, spotted jewelweed, and Joe Pye weed.<sup>2</sup>

On the decline since Tropical Storm Agnes are areas of submergent aquatic species, which in 1970, were located on the Severn River side off of Priest Point and Wardour.

In the Attitudinal Survey landowners indicated that the wetlands are particularly important as habitats for wildlife and as special areas of high plant value.

The State defines private wetlands as those lands extending shoreward from the mean high water line and which are subject to periodic flooding and support aquatic growth. State wetlands are all lands lying below the

<sup>1</sup>"Vegetation Typing Scheme," Maryland Coastal Wetlands Study, Department of Natural Resources.

<sup>2</sup>Elizabeth McWethy, "Checklist of Flora and Fauna on Weems Creek."

mean high water line. Most of the emergent wetlands around the Creek are in private ownership.

In 1970, the Maryland Wetlands Act was passed to protect and preserve wetlands from activities that would change or destroy them. Property owners who want to alter a state wetland need to obtain a license from the State Board of Public Works. Owners of private wetlands who want to dredge, fill, or otherwise modify them, must obtain either a permit or notification of approval from the Department of Natural Resources. In addition, a federal permit from the U.S. Army Corps of Engineers is required for any dredge-and-fill activity in either State or private wetlands.

All the wetlands, both tidal and non-tidal on the county side, are included in the report, Recommended Areas of Critical State Concern in Anne Arundel County. The report argues that although the Maryland Wetlands Act has reduced the rate of tidal wetland loss, the wetlands are still not being preserved, especially the inland, non-tidal wetlands which are not covered by the Act. This report was endorsed by the County Council of Anne Arundel County in Resolution No. 55-78, August, 1978.<sup>1</sup> Although the Resolution recommended that "all the wetlands in Anne Arundel County" be designated as areas of critical state concern, this general nomination was not endorsed by the Department of State Planning.

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## Steep Slopes, Bluffs, and Inlets

The steep slopes, bluffs, and inlets along the shoreline are among the Creek's most attractive and environmentally sensitive areas. As non-renewable resources, these require special protection.

### Steep Slopes

Underlain by the firm, largely unweathered Aquia formation, many of the slopes along the Creek's shoreline are steep to very steep (between 15% and 40%). They form a continuous band along the county side and are particularly prominent towards the mouth and near the headwaters. Less continuous on the city side, the slopes are nonetheless distinctive near the mouth and the headwaters.

Most of the steeply sloping areas are composed of soils from the Collington and Monmouth Soil Series. These fine sandy loams are highly erodible and pose severe limitations for residential, recreational, and agricultural use. South-facing slopes on the county-side which have been left in their natural vegetative state, are covered by a variety of deciduous trees and shrubs and are dominated by tulip poplar, oak, and hickory. These species are primarily located on the slopes of the Hock property and Priest Point.

There are few steeply sloping areas along the Creek which do not show signs of some erosional activity. In some places, especially near the mouth on both the county and city side, where vegetation has been removed, erosion is marked.

### Bluffs

Dominating the shoreline at the mouth on the city side are the bluffs of West Wardour. At elevations of 40 to 50 feet, these bluffs were weathered from the massive Aquia Formation. They consist of Collington fine sandy loam, tidal marsh, and Collington-Urban Land complex soils. The slopes range from 5% to 40%. These bluffs are one of the most prominent features on the Creek and characterize it as a tributary of the Severn River Basin among whose distinguishing attributes are bluffs or cliffs, which can reach heights of over 100 feet. Set back from the edge of the bluffs in West Wardour are large homes on three to four acre lots. Landowners noted the integration of the homes with these bluffs as contributors to the high aesthetic value of the Creek.

### Inlets

Along the shoreline on both sides of

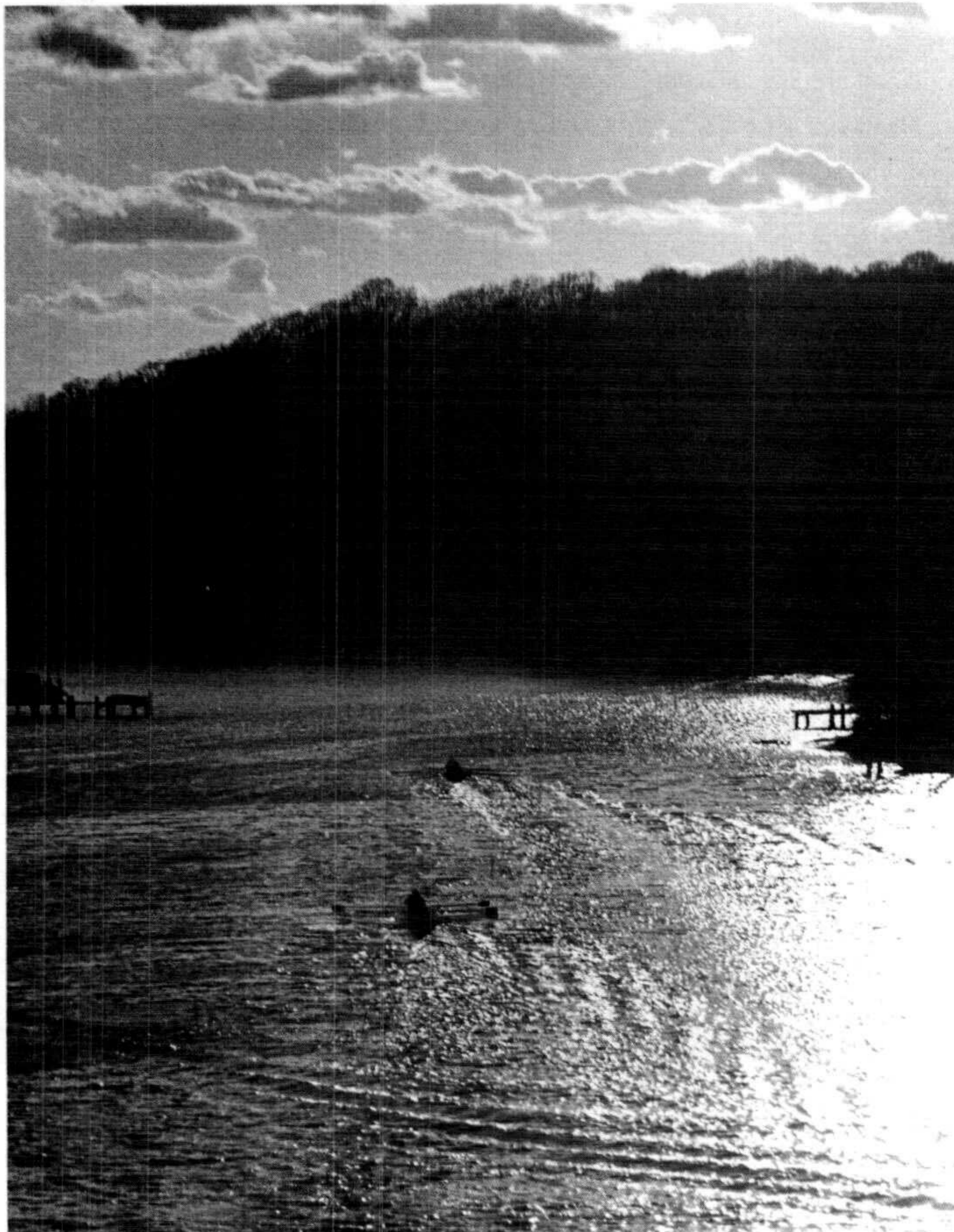
the Creek are many coves or inlets. Some of these contain wetland vegetation, which serve as habitats for wildlife and which provide aesthetic pleasure for landowners and the public. They contribute to the aesthetic experience of the Creek by offering visual variation both from the land and from the water. The inlets extend the north/south dimensions of the Creek, and engender a sense of discovery to an otherwise east/west one-mile stretch of waterway. The scalloped inlets on the county side east of Ridgely Avenue Bridge form an almost rhythmical pattern in their recurrence. Extremely sensitive to wave action, slope erosion, and sediment deposition, these inlets warrant special protective measures.

## Scenic and Aesthetic Attributes

Weems Creek is regarded as an area of high scenic and aesthetic value by its landowners. The scenic attributes of the Creek include both its natural features, especially its bluffs, steep slopes, scalloped inlets, wetlands, and upland vegetative areas, and its physical structures including its homes and bridges.

Half of the landowners who participated in the Attitudinal Survey described the Creek as having high scenic/aesthetic value. Although scenic attributes are largely subjective, and in the case of the landowners were primarily focused on views from their property, there are certain vistas both from the land and from the water which deserve special attention.

The vista of the Creek from the land was noted by ten landowners. The relative cleanliness of the water, low density of boats, and absence of commercial marinas were considered important in creating those special private views from each landowner's home. The vistas onto the Hock property, Priest Point, and the bluffs on Wardour from both the land and the water are also important. The view from the Rowe Boulevard Bridge up to the headwaters and down to the mouth was listed as significant. Another dramatic vista is the on-the-water view from the Creek out to the Severn and its far shore, and the entrance from the Severn onto the Creek. Contributing to the scenic views onto the land are those areas where the dwellings are integrated with the topography. One area of special note is Wardour with its older homes on large, well-landscaped lots.



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## Recreational Opportunities

Weems Creek offers many recreational opportunities to landowners around the Creek as well as to visitors boating on the Chesapeake and Severn. The accessibility of the Severn and the Chesapeake from Weems Creek is part of the Creek's attractiveness.

The primary recreational experience offered by Weems Creek to its landowners is the sheer pleasure of living on the waterfront near Annapolis, and within close proximity to the Severn and the Chesapeake. In the Attitudinal Survey 40% of the landowners said that they moved to the Creek to take advantage of the "on

the water" experience. For many landowners this experience is basically of a scenic or passive recreational nature. It is the enjoyment of the relatively unspoiled natural beauty of the Creek.

The "on-the-water" experience also offers many active recreational opportunities. Among these are swimming, noted by more landowners than any other form of recreation. Tied for second are fishing, crabbing, and boating. As of August 1980, the State of Maryland Water Quality Standards gave Weems Creek a Class II rating for meeting the standards

required for shellfish harvesting. Class II waters are those where shellfish are "propagated, stored, or gathered for marketing purposes, including actual or potential areas for the harvesting of oysters, soft-shell clams, hardshell clams, and brackish water clams."

Boating includes motor boats, canoes, and sailboats. High-masted sailboats are found primarily to the east of Rowe Boulevard, because of their difficulty in passing under the Rowe Boulevard Bridge. Except for the limitations posed by the bridge, the Creek is deep enough in most places for pleasure craft. It is 14 feet at its deepest near the center of the channel east of the Ridgely Avenue Bridge and ranges from six to eleven feet deep closer to shore. It is shallowest at its headwaters, where it is only about one foot deep.

A number of landowners indicated that they moved to the Creek because of its good anchorage and pier privileges. There are no commercial marinas on the Creek. There are a few small community piers: one on the county-side at Riverview Manor and two on the city-side at Admiral Heights. For those who do not live on the waterfront, there is a ramp at the end of Tucker Street providing access to the water. In addition, some residents rent pier space.

Ice skating is another favorite sport among some landowners when the Creek freezes in January.





## Historic Significance

Weems Creek is an area of historic significance in that many of its colonial, post-revolutionary, and 19th century owners were men and women of prominence in the history of Annapolis, Anne Arundel County, and the nation.<sup>1</sup> Within the watershed is an historic site which is listed on the Maryland Historic Sites Inventory.

The settlement of both the county and city side of the Creek dates as far back as the 1650's. During the 17th century the entire northern shore was owned by James Warner, the husband of the first Quaker missionary to the colonies, Elizabeth Harris. In 1670, 200 acres of what was called Warner's Neck was transferred to the Howard family, who by the beginning of the 18th century owned all of what came to be called Howard's Inheritance. In 1772, Matthias Hammond, a legislator, substantial planter, and builder of the Hammond-Harwood House in Annapolis, acquired title to the property. This property, eventually named Hammond's Purchase Enlarged, remained in the Hammond family until 1813, when 455 1/4 acres, the original Warner's Neck, was sold to Peter Miller. After Miller died in

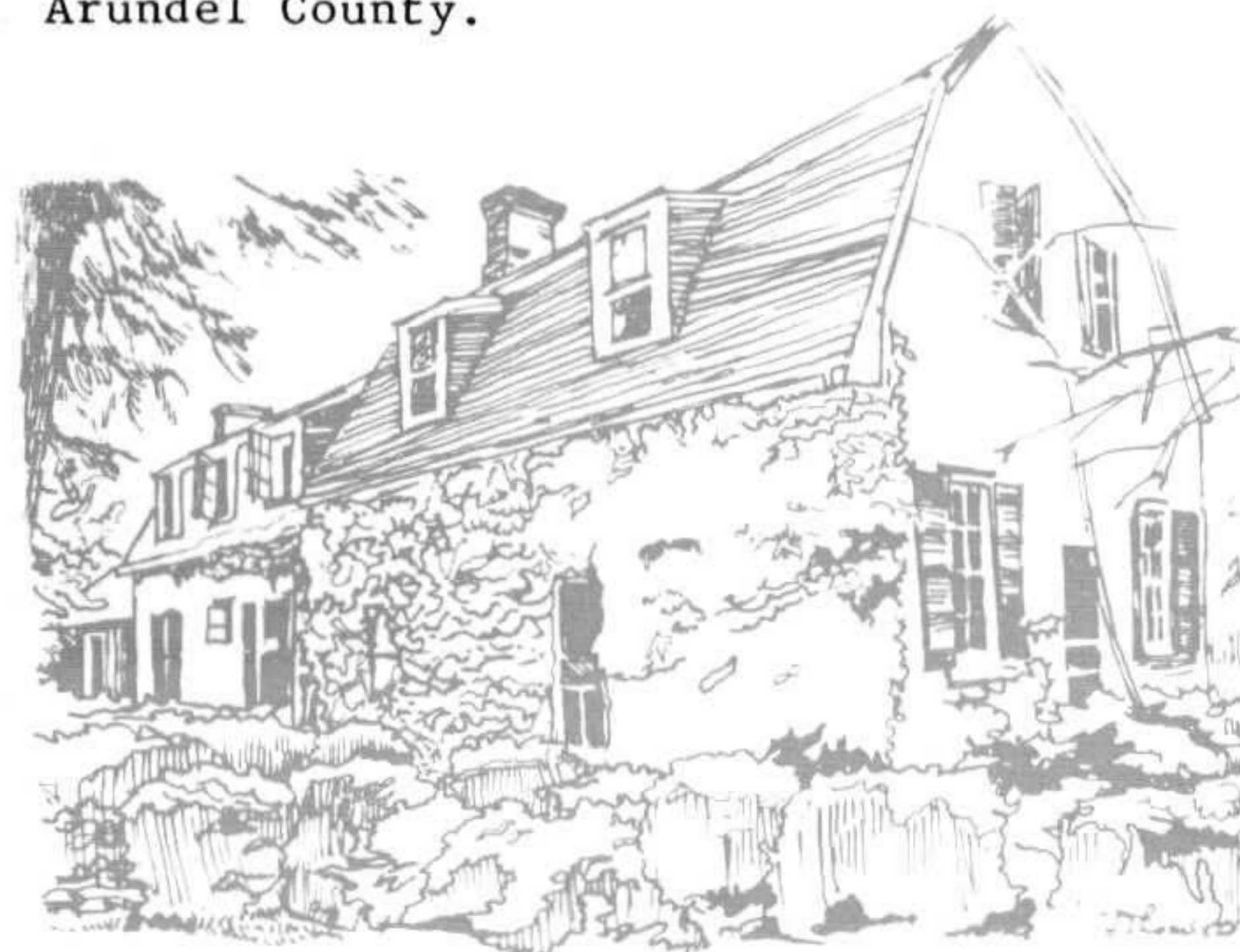
<sup>1</sup> Nancy Baker, "Historic Research of Anne Arundel County and Annapolis," Historic Annapolis, Inc., August, 1981. (unpublished)

1835, the property was purchased by George Wells, President of the Farmers National Bank, member of the Maryland Senate, and manager of the Annapolis and Elk Ridge Railroad. In 1891, George T. Melvin bought the property from the Farmers National Bank, which had acquired it when Wells ran into financial trouble in the 1870's. A condition for obtaining a mortgage was that Melvin would build a bridge across the Creek to West Annapolis. Under Melvin's ownership the land was renamed Melvin's Garden Farms and was subdivided into garden farm plots for truck farming. Four years later in 1895, Melvin defaulted to the bank. From this time on the land was subdivided for residential use.

During the 17th century, 230 acres on the city-side of the Creek were owned by the Norwood family. In 1718, the property was sold to John Beale who resurveyed "Norwood" with several other tracts into "Norwood's Beale." All of the land along the southern shore remained with the Beale family until 1787 when it was bequeathed to a nephew, John Beall Weems, after whom the Creek received its name. All the land which now includes Admiral Heights remained with the Weems family until 1842 when it was sold throughout the nineteenth and early twentieth century to successive owners who kept the property intact. In 1929, the land totalling 263 acres, was sold to a realty company who named it "Valhalla." For ten years the tract was kept intact and

used for tobacco farming centered around a single farm house. In 1939, a developer obtained title to the land and within the next ten years a few houses were built along Farragut Road. During the 19th century the land that is now Wardour was a wooded bluff called Horseshoe Bluff which was used by the residents of West Annapolis for family picnics and amusements. The first homeowners on the Bluff were a socially prominent family, the Carroll Bryans from Annapolis.

Within the Weems Creek watershed, south of Bestgate Road and between Lawrence and Maury Roads, is the state historic site of Howard's Inheritance. Built in the last half of the 18th century, the building is significant because it is one of the few 1 1/2 brick dwellings with a gambrel roof still standing in Anne Arundel County.



*Howard's Inheritance*

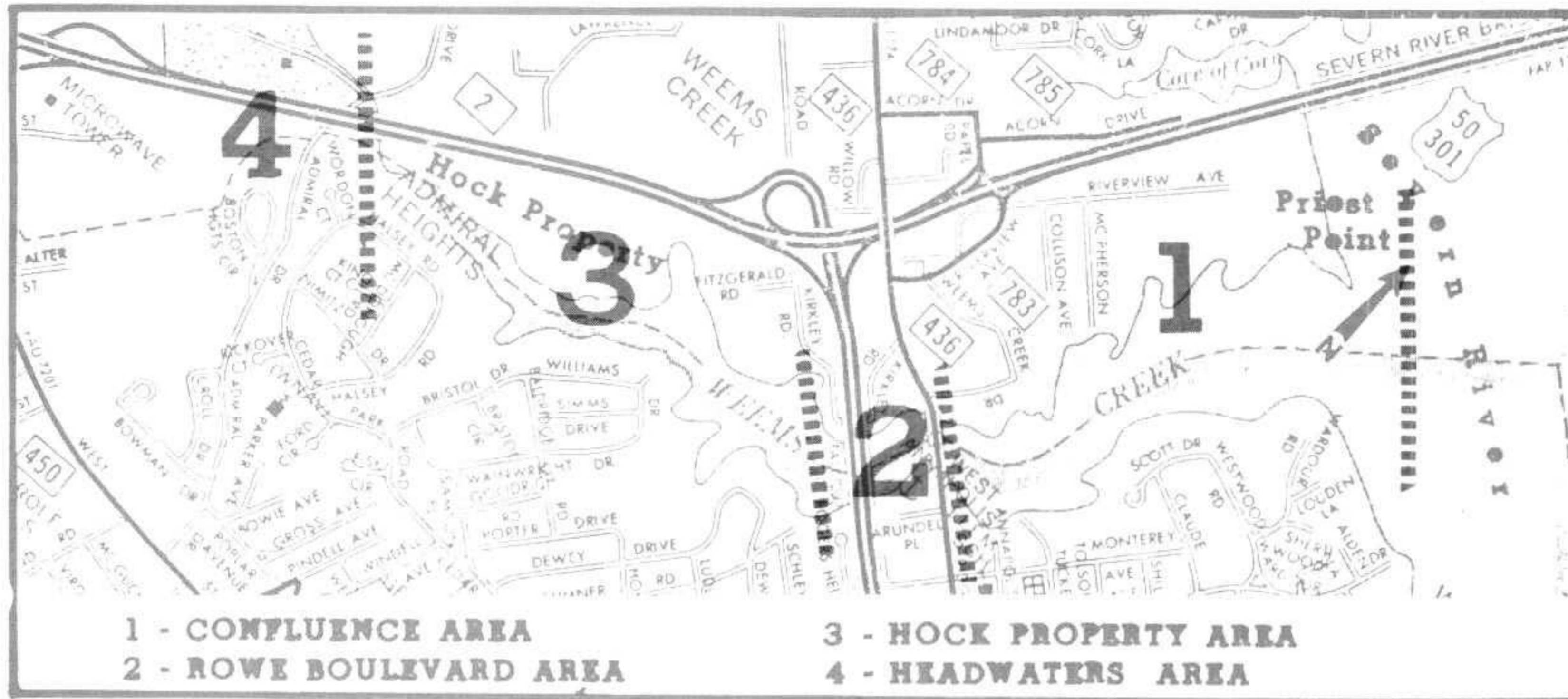
## Geographic Divisions

Most of the rural, ecological, recreational, aesthetic, historic, and social attributes already noted describe much of the entire Weems Creek study area. However, one's experience of the Creek is not as a homogeneous unvarying whole. Rather, if one could walk along its shoreline or if one canoes it from mouth to headwaters, one will experience three distinct geographic areas. Added to that is a fourth area within the watershed which is an integral part of the Creek.

A canoe trip up the Creek from mouth to the headwaters reveals three distinctive experiences, created in part by the Ridgely Avenue drawbridge and the Rowe Boulevard Bridge which divide the waterway into three sections. These can be identified as a significant natural, structural, ownership feature and named the Confluence Area, the Rowe Boulevard Area, and the Hock Property Area. Although not entirely visible from the water or the corridor, the Headwaters Area is an essential component of the Creek. Land use activities there ultimately affect the waterway and its many physical attributes.

### Confluence Area

This area extends from the Severn River to the Ridgely Avenue Bridge. It is dominated by the presence of the river at the mouth, by Priest Point, and by the bluffs of West



Wardour. An important feature of the area is the integration of homes with the landform, both on the city and county side. The large-acre lots on the city side are particularly notable. The water is deepest here, shows the greatest amount of wave action, and is relatively clear. Along the shoreline on the county side are steep slopes and wetlands. The beach along the Severn River shoreline of Priest Point provides another distinctive riverine environment. The most impressive on-the-water panoramas can be seen, both from the Severn towards the bridge, and from the bridge towards the river and its eastern shore. There is a spaciousness and openness here which is absent from the other areas on the Creek.

Of foremost concern in conserving this area are the following features:

- Priest Point
- vegetation belts along the shoreline and surrounding the dwellings
- low density housing
- dwelling setbacks
- low density of private piers
- shoreline
  - wetlands
  - inlets
  - steep slopes
  - bluffs

#### Rowe Boulevard Bridge Area

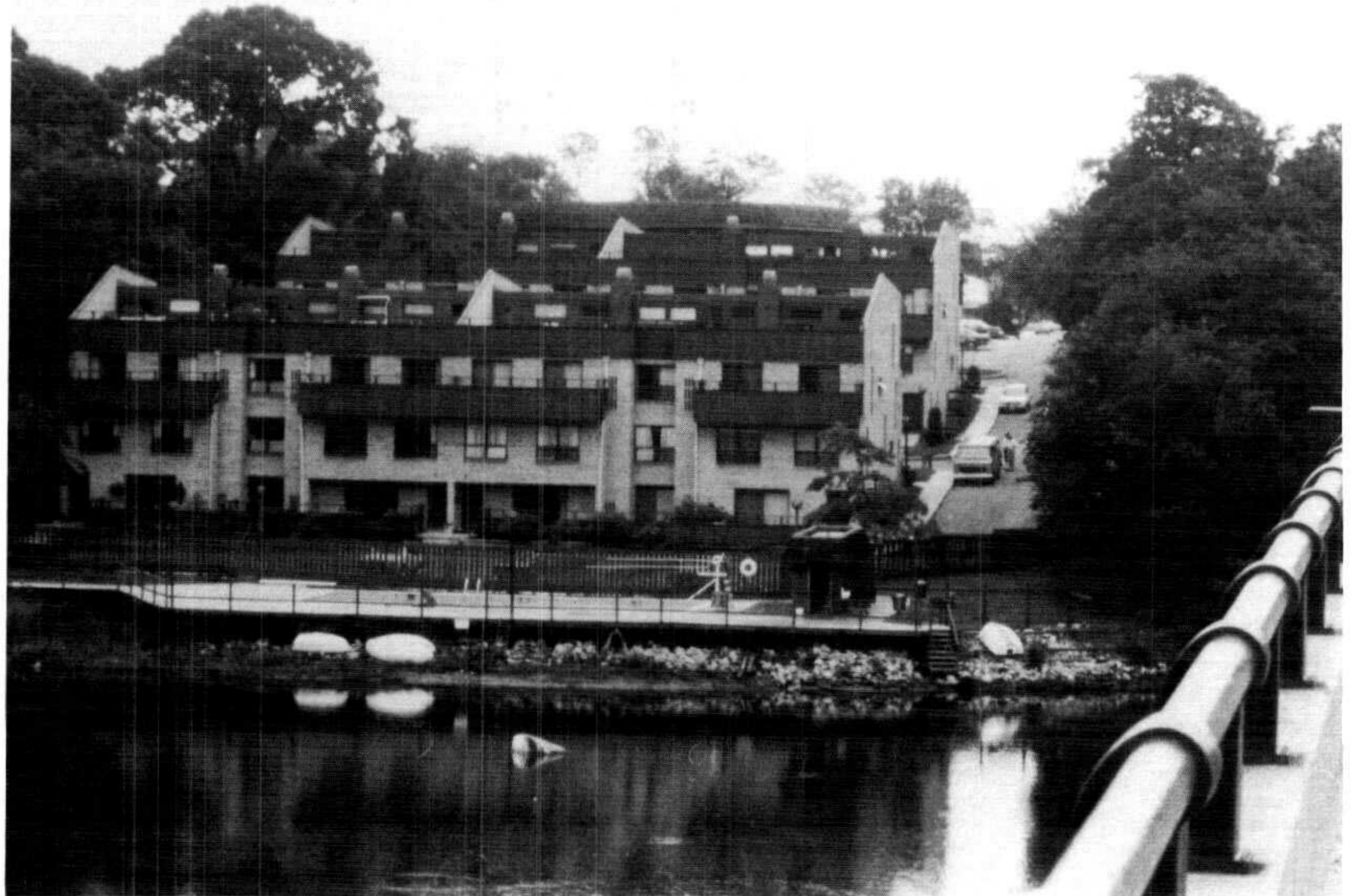
This area extends from the Ridgely Avenue Bridge to the Rowe Boulevard

Bridge. It is dominated by the two bridges, medium density housing, including a condominium and boat slips on the city side, and vegetated steep slopes along the shoreline of the county side. This area shows the greatest amount of urban influence on the Creek. It breaks the continuity of the relatively rural, undeveloped qualities first experienced in the preceding area and to be continued in the next area. On-the-water views are

limited. Views from the bridges, however, are highly panoramic.

Of foremost concern in conserving this area are the following features:

- belt of vegetated steep slopes along the county side
- repair and maintenance of the timber support piles of Ridgely Avenue Bridge
- water quality



### Hock Property Area

This area extends from the Rowe Bridge to the headwaters. It is dominated by the presence of the Hock property and the large-lot single family homes on vegetated lots adjoining the Hock property. Other important features include the steep slopes and wetlands on the city and county side. The view from the city side to the county side is particularly impressive. The water here becomes increasingly turbid and very shallow towards the headwaters. There is a marked contrast between the relatively undeveloped, naturally vegetated landscape of the county side and the half-acre single-family homes, series of private piers, and cultivated landscape on the city side. This area has the most private, secluded feeling of all the areas on the Creek. The Hock property gives the area an almost wilderness-like ambience.

Of foremost concern in conserving this area are the following features:

- Hock property
- large-lot single-family residences on county side
- vegetative belt along the shore and surrounding the residences
- water quality



### Headwater Area

There are three channels, one on the city side and two on the county side, which drain into the Creek. The water quality of these headwaters is vital to the rest of the Creek, and is particularly crucial to the Hock Property Area which first receives any runoff carried by the channels. Currently the land surrounding the channels is relatively undeveloped and some commercial, residential, and institutional development occupying about 30% of the land area. These include an assortment of small businesses, a public housing project, a detention center, a government office building, and that part of the Annapolis Mall which is in the water-

shed. At present runoff and erosion from some of these land uses are flowing into the Creek, either directly or indirectly via the channels. Because of the present and potential impact of pollution into the Creek from unregulated land uses in the headwaters, it is vital to consider the future of this area in conjunction with that of the Creek itself.

Of foremost concern in conserving this area are the following features:

- channels
- vegetative buffers
- undeveloped zones
- runoff and erosion controls

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## Wild and Scenic Recognition

As a tributary of the Severn River, which was recognized in the Maryland Scenic and Wild Rivers Act as a state scenic river, Weems Creek is part of a state-wide system which is intended to provide for the wise management and protection of recognized water courses.

The Scenic and Wild Rivers Act, as amended in 1978, declares that "The

policy of the State is to protect the water quality of these rivers and fulfill vital conservation purposes by wise use of resources within this scenic and wild river system." Because Weems Creek is a tributary of the Severn, it is appropriate that it receive special attention with respect to the conservation of its natural resources.

The nearly completed study of the Severn River by the Scenic Rivers Program of the Maryland Department of Natural Resources recognizes the special attributes of the Severn, many of which are similar to those on Weems Creek. They include vegetative "green areas" including woodlands and wetlands; steep slopes; cliffs; inlets; and the waterway itself.

## Role of the Weems Creek Conservancy and Neighborhood Associations

There are five active neighborhood associations and a strong conservancy on Weems Creek which serve as advocates for conserving those qualities of the Creek which make it a special place to live and which provide scenic and recreational opportunities to the public. On both the city and county side of the Creek these associations are represented in the Weems Creek Conservancy.

The Weems Creek Conservancy was organized in 1979 to serve "as an action forum for all matters pertaining to the waterway." With a current membership of 700, the Conservancy has been active in educating its members, the public, and city, county, state and federal officials

about its concerns. Among its identified objectives are limiting residential development, regulating boating densities, protecting wetlands, improving the water quality, and maintaining the 6 mph limit for boat traffic. The Conservancy was the initiator of this report. In December, 1980, the County Council of Anne Arundel County, in Resolution 101-80, recognizes the Conservancy "as an appropriate and effective organization for fostering citizen involvement in the planning and coordination of development and preservation activities affecting the Weems Creek area." A similar resolution R-33-81 was adopted by the Annapolis City Council in July 1981.

The neighborhood associations which comprise the Conservancy include the Weems Creek Waterfront Association, the Riverview Manor Association, the Wardour Improvement Association, the West Annapolis Civic Association, and the Admiral Heights Improvement Association. These neighborhood associations have been instrumental in protecting the Creek and its corridor from certain proposed and existing actions which threaten and which could ultimately destroy ecological, aesthetic, and recreational, and characteristics which are highly valued by its members.

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## Landowner Characteristics

The majority of residents on Weems Creek represent a fairly homogeneous and stable group of people in terms of ownership, length of residence, age, and occupation. Over three-fourths of the landowners interviewed stated that they were not planning to sell their property in the near future.

### Ownership

Of those interviewed, all but three were landowners of property on Weems Creek.

### Length of Residence

Almost half the landowners interviewed have lived on the Creek for over 20 years. Only two have lived there for less than a year. One resident has lived on the Creek for 65 years. A breakdown by length of residence shows the following:

1 - 10 years = 35%  
11 - 20 years = 18%  
21 - 30 years = 29%  
31 - 40 years = 10%  
41 - 50 years = 2%  
Over 50 years = 6%

### Age

The majority of landowners are in their middle and older years. No landowner interviewed was under 27 years. A breakdown by age shows the following:

27 - 35 years = 13%  
36 - 45 years = 10%  
46 - 55 years = 24%  
56 - 65 years = 36%  
Over 65 = 17%

### Occupation

The majority of landowners (both husband and wife) work in white-

collar, professional, and entrepreneurial occupations. These include: physician, lawyer, engineer, architect, planner, educator, counselor, realtor, financier, journalist, editor, librarian, government official, underwriter, restaurant owner, gallery owner, police, contractor, laundry operator, administrator. Six noted they were housewives.

Twenty-two landowners, almost one-third the survey returns, are retired, having also worked in white-collar, professional occupations.

### Intentions to Sell

Fifty out of sixty-five surveys indicated that the landowners were not planning to sell in the near future. Four stated they would sell soon and two noted they would sell eventually. The remainder did not respond.

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## Landowner Attitudes about Conservation

The majority of landowners on Weems Creek would like to see the Creek conserved for the duration of their residency and for the next generation.

There are approximately 100 landowners and their families on Weems Creek. Of the 65 surveys that were returned, over 40 stated a desire to keep the Creek the way it is now,

both in the immediate and the immediate and the long-term future. Seven landowners favored a return to the way it was 10 to 34 years ago. It should be noted that only one-third of those interviewed are members of the Weems Creek Conservancy or a neighborhood association. The comments seem to indicate that many landowners, both members and non-members of the Conservancy, would

support conservation efforts on the Creek.

Recurrent comments by those interviewed show that landowners want to see the retention of the rural, ecological, social, aesthetic, and recreational qualities about the Creek which have in the past and which today make it unique among waterways in Annapolis. The comments also sound a call for enhancing those qualities. They ask for both the

conservation of what is, and a restoration of what has been lost. In summary form, some of the general and specific comments are provided below:

#### Rural

- Keep the area natural and rustic.
- Regulate to preserve the rural quality.
- Restrict the density of residential development, especially with respect to condominiums and townhouses.
- Restrict commercial development, both on the land and on the waterway.
- Limit the building of additional piers.

#### Ecological

- Ensure private development stays within local government regulations.
- Address noise pollution, especially from trucks.
- Restore the ecological conditions of 25 years ago.
- Protect the shoreline from erosion.
- Plant more effective ground cover in selective areas.
- Stop the erosion at the end of Tucker Street.
- Reduce siltation of the Creek by better control of runoff, especially in the Headwaters Area.

- Improve the water quality of the Creek.
- Conserve the Hock Property.
- Conserve the wildlife.

#### Social

- Maintain strong neighborhood associations.
- Encourage more involvement by local landowners.

#### Aesthetic

- Keep area clean and well-maintained. Preserve its beauty.
- Address problem of roadside littering.
- Improve water quality.
- Prevent commercial marina development.

#### Recreational

- Limit amount of boating.
- Limit facilities for boats and yachts.
- Permit only private docks with limited number of slips.
- Improve water quality.



*"Address noise pollution - especially from trucks."*

# Section IV - RESOURCE ISSUES

## Introduction

There are numerous issues facing the landowners on Weems Creek which now threaten or which could potentially diminish the special attributes and qualities of the waterway and its corridor. Some of the issues are broad in scope and involve political and economic factors influencing land use changes throughout the Creek. Other issues are more specific to certain areas, resources, properties, and attributes. Some issues were ascertained through discussions with members of the Weems Creek Conservancy, and with staff on the Annapolis Planning Commission, Anne Arundel County Planning Commission, and Maryland Department of Natural Resources. Many issues were reported by landowners in the Attitudinal Survey. Some were noted through on-site field trips on and around the Creek and through the independent analysis of the resources themselves. The following represents a synthesis of all the sources of information. It is not intended to be comprehensive but rather to focus on those issues that are most critical to the conservation of the Creek.



## City-County Jurisdictions

Under the jurisdictions of Annapolis and Anne Arundel County, Weems Creek is subject in many cases to different kinds of regulations affecting the type and density of land use on its northern and southern shores and influencing the degree of protection and control of its resources. The absence of a unified policy towards the zoning and local regulation of certain key resources could result in disjointed conservation efforts by the two local governments. Some of the differences are itemized below:

### Zoning

- The city permits a greater density of single family dwelling units than the county over a larger area of the corridor. On the county side the highest density is R-5 (about 5 d.u. (dwelling units) per acre). On the city side the highest density is R-4 (about 9 d.u. per acre) and R-1 (about 6 d.u. per acre). Together, the R-4 and R-1 zones comprise about three-fourths of the city side. The R-5 zone comprises about half of the county side.

- The current impact of zoning is greater on the city side because of the existing sewer and water facilities. There are no public sewer and water services on the county side at present, although there are plans to extend them in the R-5 zones within the next 11-20 years. R-5 density development is

not permitted "unless both public water and sewer are provided in sufficient quantities for fire and domestic use."

- Although both the county and the city permit multiple family housing in certain zones along the shoreline, either by conditional use or special exception, the county zoning ordinance specifies the minimum area and density requirements for each type of housing whereas the city zoning ordinance does not stipulate a minimum area or yard requirement for a planned residential development. The result is that on the county side in the R-5 zone, mobile home parks, planned unit developments, and townhouses and dwelling unit complexes in cluster development would only be allowed as a special exception on minimum areas of 10 acres, 20 acres, and 10 acres respectively. On the city side, however, a planned unit development could be proposed as a conditional use on relatively small lots in the R-1 and R1A districts.

### Natural Resource Protection

- County zoning and subdivision regulations record a general commitment to preserving those "existing features which would add value to residential development or natural or man-made assets of the county, such as trees, water courses, falls, beaches, vistas... and similar irreplaceable assets." Although the



county recognizes natural cover, floodplains, steep slopes, and wetlands in its subdivision regulations as features requiring special consideration, there are protective measures which could be taken in addition to those already in effect. Existing threats to these features are covered in more detail under "Steep Slopes," "Wetlands," "Other Shoreline Features," and "Aesthetics."

- The city's Environmental Action Strategy, which was published in the early 1970's, does recognize the need for better controls in order to protect environmentally sensitive areas. However, there are no regulatory powers attached to this document, nor does it stress individual natural features. There are no references to natural cover, floodplains, steep slopes, and wetlands in its zoning and subdivision regulations, although the city does require the inclusion of "watercourses, marshes, rock outcrops, wooded areas .... and other significant features" in the contents of the preliminary subdivision plan.



## Land Values and Taxation

The high cost of waterfront property and the considerable increase in land values over the past five years have led some landowners along the Creek to subdivide their property and others to purchase property with further subdivision in mind.

The Weems Creek study area reflects a wide range of land values. These are difficult to generalize, especially since there will always be exceptions to any quoted values. Nevertheless, some notations of land values around the Creek will provide a better picture of the Weems Creek community and one of the issues mentioned by landowners: subdivision of water-privileged property for speculation purposes.

- Non-water privileged single-family homes near Route 50 sell for \$50,000; their counterparts on Ridgely Avenue range from between \$65,000 and \$100,000.

- Water-privileged single-family homes range from \$200,000 to almost \$500,000, depending upon the location. The projected sales price of the five townhouses to be constructed at the foot of Tucker Street may range within \$250,000 and \$275,000. Condominiums with direct waterfront at Mariner's Cove command over \$100,000. The current sales price of a large dwelling on one acre of prestigious Horseshoe Point is three-fourths of a million dollars!

- The skyrocketing land values of homes along the shoreline have led some in recent years to purchase property with the sole intention of further subdivision. In the Attitudinal Survey land speculation was particularly noted in Wardour and other parts of the Confluence Area. In addition, increased land values were attributed as the reason for increased development in Tucker Street, West Annapolis, Mariner's Cove, and the Rowe Boulevard Area.

- In order to create "buildable" land which would meet the zoning and subdivision minimum lot size requirements, some landowners may try to fill in wetland areas. A case is now pending which proposes to fill in part of a wetland in the Wardour area in order to meet city subdivision requirements.

- Although land values have recently been "flattening out," over the past five to ten years, they steadily rose at between 10% to 15% each year.

- The county tax assessor estimates that waterfront values in Annapolis have increased on average by as much as 50% over the past few years.

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## Development within the Corridor

Existing city and county zoning in the Creek corridor has the potential to dramatically increase residential development. Present county zoning on what is now the least developed side of the Creek could result in an increase of single family dwellings at more than four times the current number.

### City Side

- Development is permitted in the R-1 zone at 6 d.u. per acre. This zone encompasses about two thirds of the corridor on the city side.

- In addition to high concentrations of housing, this zoning also increases the likelihood of many more slips and boats in the waterway. One slip is permitted for each 25 feet of waterfront property owned.

- As a result of "spot zoning" (zoning a relatively small area differently from the zoning of the surrounding area), the R-4, General Residential District was created. Because of this "spot zoning," the condominium at Mariner's Cove was permitted. Many landowners fear future attempts to change zoning in similar ways in other areas along the Creek.

- In the absence of minimum area requirements and yard requirements for planned residential developments, it may be possible to cluster multi-



ple-family housing on small parcels along the shoreline which would reduce the amount of open space adjacent to the shoreline, and destroy the vistas up to the crests of the hills.

- Results from the Attitudinal Survey indicate that landowner satisfaction with current zoning on the city side is strongest in areas zoned R1A and R1 west of the Rowe Boulevard Bridge. The greatest amount of landowner dissatisfaction with current zoning was concentrated in the R1 district east of the Rowe Boulevard Bridge in the West Annapolis area. Some believed this area was too dense already; others, that it should not be denser, and were opposed to condominiums.

### County Side

- The county's 1978 General Development Plan endorses a policy of contained growth which encourages deve-

lopment in areas where "adequate public facilities exist or can be efficiently provided." Many of these development areas are along the waterways, including the southwest portion of the Severn and its Weems Creek tributary. As a result, the Weems Creek corridor, with the exception of the Hock property, is targeted for low to medium density residential use.

- Once public sewer and water services become available to R-5 areas along the corridor, landowners will be able to subdivide and sell their property at densities of between 3-5 d.u. per acre. South of Route 50 the R-5 zones are within the 11 to 20 year planned water and sewer service area.

- The approximate area of the R-5 and R-1 districts is 108.5 acres. (This excludes the Hock property, Priest Point, and the commercial districts.) Current single family residences total approximately 103 houses. At maximum allowable densities of 5 d.u. per acre in the R-5 district and 1.09 d.u. per acre (1 d.u. per 40,000 square feet) in the R-1 district, there could be a total of 454.5 d.u. in the combined zones. This would be an increase of 351.5 houses. Although the exact figures could be debated and are included here to show maximum possible density, they give some indication of the dramatic change and transformation to the county side if even half the numbers

were built.

- Results from the Attitudinal Survey indicate that landowner satisfaction with current zoning on the county side is strongest in the R-1 district. Many landowners in the R-5 district, however, were opposed to the existing zoning. Some wanted the zoning lowered to R-1 or R-2 density.

- In the absence of provisions per-

mitting cluster development in R-5 zones on less than 10 acre areas, or other innovative design procedures which would ensure the retention of a continuous band of open space at prescribed distances from the shoreline to the residences, the zoning could result in the loss of the green spaces and quasi-rural atmosphere of the Creek.

- Within the corridor between Route 50 and Riverview Avenue are two

commercial zones. There have been recent proposals to intensify development there and construct a highrise office building and hotel. In the absence of height requirements for commercially zoned districts, the buildings could be visible from the waterway, and from homes within the corridor. More intensive commercial use there could also have a ripple effect on the residential part of the corridor in terms of increased traffic, noise, and use.

## Development within the Headwaters Area and Remaining Watershed

Land use activities within the watershed are ultimately intertwined with the conservation of Weems Creek. Commercial and industrial development in the headwaters area are particularly crucial to the water quality of the Creek and pose a serious threat in the absence of strict runoff and sedimentation controls at the development site and careful monitoring of the existing regulations.

- At present the headwaters area is relatively undeveloped. However, in its 1978 General Development Plan the county slated the area for commercial and industrial park development.

- On the county side the headwaters area is within the planned 6-10 year sewer and water service area. An intercepting or trunk sewer and force main is proposed for the area within 6 to 20 years. A transmission or feeder main is also planned for the area within 6 to 20 years.

- There are a number of small businesses and offices and a public housing project within the headwaters area. One business on the city side did not have any sediment controls when it was built, and was a source of pollution for the Creek prior to the establishment of controls. A recent on-site visit to the headwaters area revealed existing erosional problems. Two were on the county side, one at the Environmental Protection Agency field office and lab on the south side of Bestgate Road. The worst case was on the city side, where slopes were so badly eroded at Boston Heights that tree roots were exposed, deep gullies carved into the hillside, and the soil deposited along the Admiral Boulevard in direct line of the Creek. During heavy rain the silt can be 6" to 8" deep. This situation is reportedly in part the result of non-enforcement of city regulations.

- In the Attitudinal Survey landowners identified a few other existing and potential sources of pollution throughout the watershed. Many landowners referred to runoff from the Naval Academy Stadium Parking lot, a result in large measure of its non-porous pavement. The County Detention Center, Annapolis Mall, and proposed Industrial Park were also listed. At present the Detention Center appears to have no noticeable erosional problems. The Annapolis Mall has good erosion and sedimentation controls including a dry retention pond above Montgomery Ward. The run-off is conveyed underground. Only the southernmost part of the mall would drain directly into one of the Creek's channels. Most of it drains into Saltworks Creek. Runoff from the area zoned WIB, Industrial Development District, for the Parole Industrial Park would drain directly into at least two of the Creek's three channels.

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## Hock Property

The Hock Property is an invaluable asset to the rural character and wildlife of Weems Creek. Many landowners would like to see part or all of the property permanently retained in its natural state. They are concerned that at some future time its owner, the State Highway Administration, may permit development in ways which could limit or destroy its special attributes.

- The property is currently zoned OS, Open Space District, by the county. Like all zoning, this could be changed in the future, and does not afford the property permanent open space status.

- The property is within a six to ten year planned sewer service area, with a six to ten year proposed force main going along Route 50 adjacent to the northern and western border of the property. The tract is within an 11 to 20 year water service area.

- A commitment to keep the Hock property in permanent open space could influence adjoining landowners to take similar action on part of their property. If there is any question that the Hock property may be developed at some future time, other landowners may be reluctant to undertake long lasting conservation actions on their own land.

## Priest Point

Like the Hock Property, Priest Point is particularly valuable to the ecology of Weems Creek and to the scenic value of the Confluence Area. Many landowners fear that at some future time its owner, the Redemptorist Order, may permit development in ways which could diminish the natural qualities of the property. They would like to see as much of the property as possible retained in its undeveloped state.

- Like the Hock property, Priest Point is zoned as Open Space by the county. The zoning could at some future time be changed.

- On the Map No. 1 of the county's General Development Plan, showing the future Land Use Plan, the property is included in the category of low to medium (2-5 d.u. per acre) residential use.

- The property is within a 11 to 20 year planned sewage service area with a pumping station proposed between the Ridgely Avenue Bridge and the Severn River, near Priest Point. The property is also within an 11 to 20 year planned water service area.

## Water Quality



Many landowners are concerned about the deteriorating water quality of the Creek, especially near the headwaters where sedimentation has reduced the water depth and increased its turbidity. Factors influencing the degradation of the water quality include: runoff from developed areas throughout the watershed; bank erosion in steeply sloping areas throughout the Creek; sewage discharge from visitors living on boats; and exhaust from motor boats.

- Like Spa and Back Creeks, Weems Creek is undergoing considerable sedimentation especially in the Hock property area. Between 1974 and 1977 (when the last water quality tests were made) annual suspended solids values showed increases at a testing station close to the mouth of the Creek.

- Bank erosion is evident throughout the entire creek corridor, especially on the Hock property, Severn River side of Priest Point, at the foot of Tucker Street, and near coves.

- Some residents would like to see the Creek tested for heavy metal content.

- Exhaust from motor boats contributes to the Creek's pollution.

- Closely trimmed lawns were noted as a contributor to runoff since the short grass does not retard runoff very effectively.

- Sewage dumped overboard by visitors living on their boats is a problem noted by a few landowners. Some vacationists have spent entire summers living on their boats.

- The Monroe Street Pumping Station was cited as a traceable source of pollution by some landowners. In recent years Back Creek has been closed to swimming as a result of pumping station overflows.

- As of August, 1980, the State of Maryland Water Quality Standards gave all estuarine portions of the Severn River below Forked Creek a Class II rating. Included in this area, Weems Creek should be monitored regularly to ensure that its water quality for the propagation, storage and gathering of shellfish is maintained. There have not been any tests made on Weems Creek since 1977.



## Steep Slopes

The erosion of steeply sloping banks (15% and greater) throughout the corridor is a form of visual blight, and contributes to the runoff and sedimentation of the Creek and its wetlands, the loss of ground cover along the banks, and in some cases could pose a hazard to "life, limb, property and public welfare."

- Erosion of steeply sloping banks is mostly prominent in the Confluence Area and on the Hock property.

- Some believe that many of the eroding areas are the cumulative

result of many years of neglect, rather than caused by recent development for which there are restrictions and followup procedures mandated by the state, county, and city.

- Slopes of 15% and greater which are underlain by the Collington and Monmouth fine sandy loam soil types are particularly vulnerable to erosion. These soils follow the water's edge along the county side. On the city side they extend along the shoreline in West Wardour.

### County

- Although Anne Arundel County Subdivision Regulations stipulate

that existing features and natural cover should be preserved (Sections 13-109.2 and 13-109.3), the regulations do not focus on the protection of steep slopes as a specific natural feature except as part of the Grading and Sediment Control provisions. These provisions permit development within any steep slope area (anything greater than 15%) "provided that a minimum of thirty (30) percent of the lot or parcel upon which the principal structure is to be situated, is less than fifteen (15) percent grade and contiguous to an approved county standard road." (Section 12-2020). This provision allows construction on parts of steeply sloping areas which may still be inappropriate for construction. There is no absolute prohibition in the ordinance against building on slopes greater than a stated percentage. In spite of the Grading and Sediment Control stipulations, in practice grading has been permitted in areas of over 15% slope where less than 30% of the lot is under 15% slope.

- There are no guidelines or regulations for creating a buffer zone between development in the steeply sloping area and the Creek or wetland into which any sediment or runoff would fall.

#### City

- There are no regulations regarding building in steeply sloping areas in the Land Development and Subdivision Code other than the requirement that

the developer record their presence at the time of submitting the preliminary plat.

- Attention to steep slopes is given in Chapter 6 of the City Code, "Building Regulations." Some believe these regulations come too late, after the preliminary plans have already been approved. By then it is often too difficult in terms of time and money to change them.

#### County and City

- Because the regulations for building in steep slope areas appear either in the Grading and Sediment Control provisions or in the Building Regulations, they may be too late to affect initial design decisions. Ultimately the land resource may receive secondary consideration as some kind of engineering solution is sought to make it suitable to the use rather than the use appropriate to the resource.

#### Soil Conservation Service

- The Soil Conservation Service (SCS) has limited funding and staff which circumscribe its role in reviewing development proposals in steeply sloping areas. Because of lack of funds, they are not involved with the design, construction, or supervision of the development, and only comment on proposals after the designs have already been approved. SCS would like to be more active in the project design stages of development.

## Wetlands



Wetland ecosystems are vulnerable to erosion, runoff, and pollution from development within the corridor and watershed.

- There are a number of references in the County Subdivision Regulations about land use restrictions within wetland areas. However, there are no land use restrictions or buffer zones for those areas immediately adjacent to the wetlands, where development could have a deleterious effect on

them. Undisturbed buffer zones of a prescribed number of feet would reinforce the protection already afforded wetland areas in the county.

- There are no restrictions on land use activities either within or adjacent to wetlands in the zoning and subdivision sections of the City Code. In the absence of setback requirements or buffer zones between the wetlands and building sites, controversial cases may recur.

- Some landowners believe that the filling of wetlands is an issue. The Wetlands Division of the Department of Natural Resources records that only five permits have been granted over the past five years in Weems Creek, none of which concerns the filling of wetlands. In 1977, a permit was granted to rebuild a rip-rap revetment. In 1981, three dredging projects and one storm drain project were approved. These projects were all within state wetlands, that is, all lands lying below the mean high water line. There has only been one application to fill in a wetland for building purposes on the creek in five years.

- With the existence of the State Wetlands Law regulating activities within the wetlands themselves, additional concern for wetland protection should focus on development activities adjacent to the wetlands and throughout the watershed.

## Other Shoreline Features



In addition to erosion of steep slopes, the banks and inlets or coves along the shoreline are continuously threatened by tidal action and waves generated by boat wake. Because wind-wave activity is likely to be relatively suppressed in many areas of the Creek, it is the waves generated by boat wake which deserve closest attention.

- The six knot signs may not be sufficiently visible or positioned in the optimum locations for enabling motorists to decrease their speed at distances far enough away from the shoreline so as not to generate excessive boat wake. Anne Arundel County has determined in its study, The Role of Boat Wakes on Shore Erosion that "boats approaching a speed-control zone will pass through the speed which generates maximum wake as they slow from high speed." Consequently, "the speed limit signs should be placed, when possible, at locations where the creek is so wide that the wake energy can dissipate before reaching the shore."

- Based on its analysis of a site which has some similarities with

Weems Creek, the Anne Arundel County report concludes that shoreline erosion caused by boat wake is largely a function of distance, and that "the greatest relative impact is likely to occur in narrow creeks where the channel width forces passage within two or three hundred feet from the shore." Experiments with controlled boat passes show that for a given water depth, the amount of wave energy depends upon boat speeds. Speeds at six knots would generate near maximum wakes when the water depth is less than six feet. In general, at low boat speeds the wake is small; at intermediate speeds (seven to ten knots) it is at its highest; at high speeds it decreases again.

- Owners of shoreline property may not be aware of the advantages and disadvantages of different kinds of bank stabilization structures. Although timber bulkheads are very attractive and used by many landowners along the Creek, they are susceptible to scouring because of their inability to absorb wave energy unless some kind of toe protection such as riprap is used.

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## Boating

One of the most recurrent fears expressed by landowners was the impact of constant increases in boating density on the Creek.

- Given the current zoning provisions permitting one slip for every 25 feet of waterfront property owned, there is a potential for a great increase in slips on the city side.

- A number of landowners, especially on the county side, are renting slips to non-residents. County regulations specify that private slips in residential areas are only for owners, tenants, and guests.

- Many landowners were adamant in their rejection of any commercial marinas on the Creek. They were also opposed to any more community piers unless they fully comply with the current regulations. Nine landowners specifically voiced opposition to a proposed marina at Mariner's Cove.

- There is concern about the impact of boating on wildlife.

- Some landowners do not think the six knot speed limit is being sufficiently enforced.

## Aesthetics

Issues related to aesthetic concerns about the waterway and the corridor cover both visual and auditory problems and encompass present and potential threats to the scenic qualities and quasi-rural peaceful atmosphere of the Creek.

### Vegetated Areas

- The permitted maximum building densities in existing county and city zoning could potentially lead to the destruction of woodland along the shoreline and upland areas.

- Existing cluster development regulations are not sufficiently applicable to small-scale development in

environmentally sensitive areas.

- Without setback requirements from the shoreline, wetlands, woodland, and other vegetative open areas could be greatly diminished and destroyed.

- Areas where ground cover has been removed or lost because of erosion are very unattractive and need to be revegetated.

- Plantings of non-native species along this stream corridor conflict with the "natural," vegetative qualities of this tidal estuary.

### Vistas

- In the absence of height restrictions, especially in the commercial and industrial districts on both the city and county sides, vistas from the water to the land could be severely obstructed. With the construction of highrises, the rural quality of the Creek could be totally lost.

- Without setback requirements views from the upland to the Creek as well as the view from the Creek to the upland could be intruded upon and in some cases completely obstructed.

- In the absence of siting provisions for dwellings, homes could continue to be built on the crests of the hills, or steep slopes, thus interfering with the natural shape of the slopes and banks and infringing upon the horizon line.



*An example of high boating density: a view of Back Creek, Annapolis.*



## Structures

- Unless educated about the impacts different textures and colors of structures have on the landscape, some landowners and builders may continue to construct those homes which emphasize the dwelling at the expense of the surrounding landscape.
- There are insufficient design standards encouraging the integration of homes with the landforms.
- There are a number of slips in disrepair around the Creek, especially in the Hock Property Area on the city-side, which diminish its attractiveness.



## Litter

Litter is evident both within the corridor and along the waterway itself. Litter problems include:

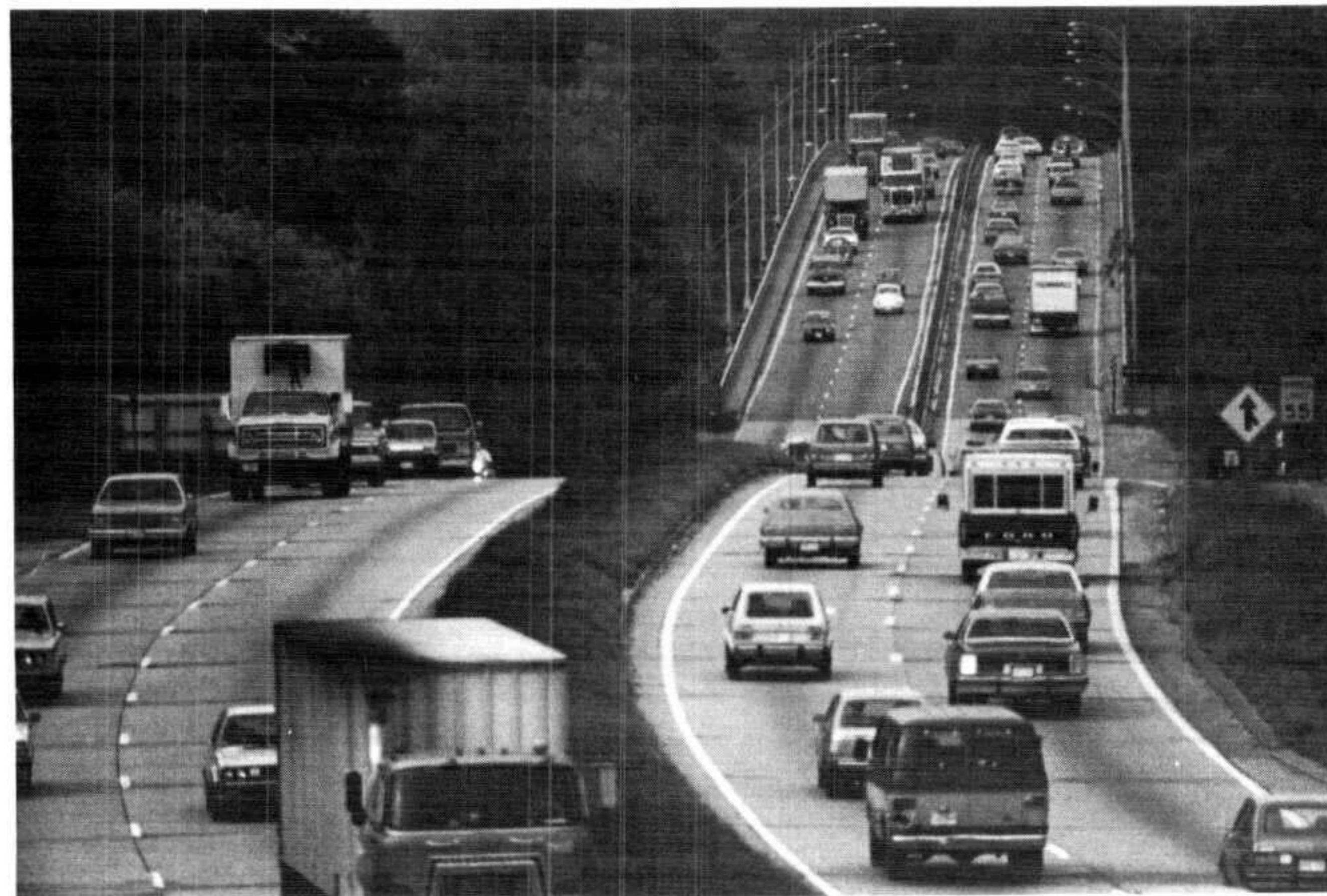
- Littering on Kirkley Road.
- Broken glass and litter underneath Rowe Boulevard Bridge.
- Sewage discharge from boats.

## Water Quality

- Shallow, turbid headwaters are particularly unattractive.

## Noise Pollution

- Noises from traffic on Route 50 and late night from the Severn River Bridge were noted by a number of landowners.



# Section V - RESOURCE OPTIONS

## Introduction

The Resource Options have been written in direct response to the assessments of the resources and issues in the preceding sections. This section seeks to offer a variety of alternatives whereby the significant resources on Weems Creek can be conserved and the issues threatening their integrity can be addressed. As alternatives, the options should not be construed as recommendations but rather as potential, realistic techniques and programs which could resolve or mitigate some of the problems now confronting landowners on Weems Creek.

The options are like an a la carte menu. They need not be regarded or accepted in their totality, but instead can be reviewed and assessed independently of each other. It may appear that only parts of options are appropriate or that combinations of diverse options make the most sense. Some options can be undertaken right now: in some cases programs already exist which can address a particular issue. Other options need greater preparation, education, and commitment.

Although the options respond to many landowner concerns already enumerated in the preceding sections, they are not organized on the basis of resources or issues. Rather, they are presented from the viewpoint of the

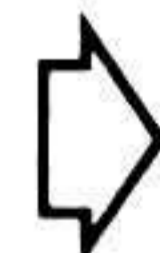
party responsible for their execution. What could be done is linked with who could do it. The potential participants include: the Weems Creek landowners, the City of Annapolis, Anne Arundel County, the State of Maryland, and the federal government. At a time of decreased public expenditure for conservation efforts and concern with over-regulation, a great amount of attention has been given to the role which local landowners can continue to play in protecting the natural resources of Weems Creek.

Part of the impetus for encouraging local landowners to become co-partners in conservation strategies came from the results of the Attitudinal Survey. In response to the question, who should assume responsibility for conserving Weems Creek resources, the landowners named themselves as frequently as any public agency. If the Weems Creek Conservancy and neighborhood associations are combined under the category of local landowners, it would appear that many landowners believe that as a group they must assume the most responsible role for conserving their environment. The summary of responses is shown below. It is interesting to note that nearly equal weight is given to the city, county, and state governments.

### WHO SHOULD BE RESPONSIBLE?

NAME OF PRIVATE/ PUBLIC PARTIES	# of RESPONSES
Landowners	25
Weems Creek Conservancy	7
Neighborhood Associations	12
City Council	26
County	27
Maryland Department of Natural Resources	20
Federal Government	14

In the Attitudinal Survey landowners offered a variety of options for resolving the many issues threatening natural resources on the Creek. The following summarizes their recommendations in terms of the issues outlined in the preceding section.



## WHAT SHOULD BE DONE?

OPTIONS	NUMBER OF RESPONSES	OPTIONS	NUMBER OF RESPONSES
<u>City-County Jurisdictions</u>			
Coordination between city and county	5	and regulations, enforcement and monitoring	19
Special District	2	<u>Steep Slopes</u>	
<u>Land Values and Taxation</u>		Erosion controls	3
Property tax incentives	2	<u>Wetlands</u>	
<u>Development Within Corridor</u>		Wetland protection	4
Limit development	10	<u>Other Shoreline Features</u>	
Keep out commercial development and multi-family homes	9	Maintain 6 knot speed limit	7
Enforce zoning	5	Build retaining walls	1
Determine carrying capacity	1	<u>Boating</u>	
"Downzone" on county side	1	Keep out long piers, marinas	7
<u>Development Within Headwaters Area and Remaining Watershed</u>		Restrict transient boat anchorage	1
Better erosion sedimentation, and runoff regulations, enforcement and monitoring	17	Prevent pier rentals	1
<u>Hock Property</u>		<u>Aesthetics</u>	
Permanent easement	9	Owner beautification	1
<u>Priest Point</u>		<u>General Options</u>	
<u>Water Quality</u>		Landowner watchfulness	12
Better erosion sedimentation	-- ↗	Weems Creek Conservancy participation	8
		Public education	3
		Conservation plan	1

Because the options prepared for this study are not organized on the basis of resource issues, it may facilitate reading them to first have an overview of which issues are addressed by which options. The following matrix shows this interrelationship:



# Private - Landowner Options

## CONSERVATION EASEMENTS

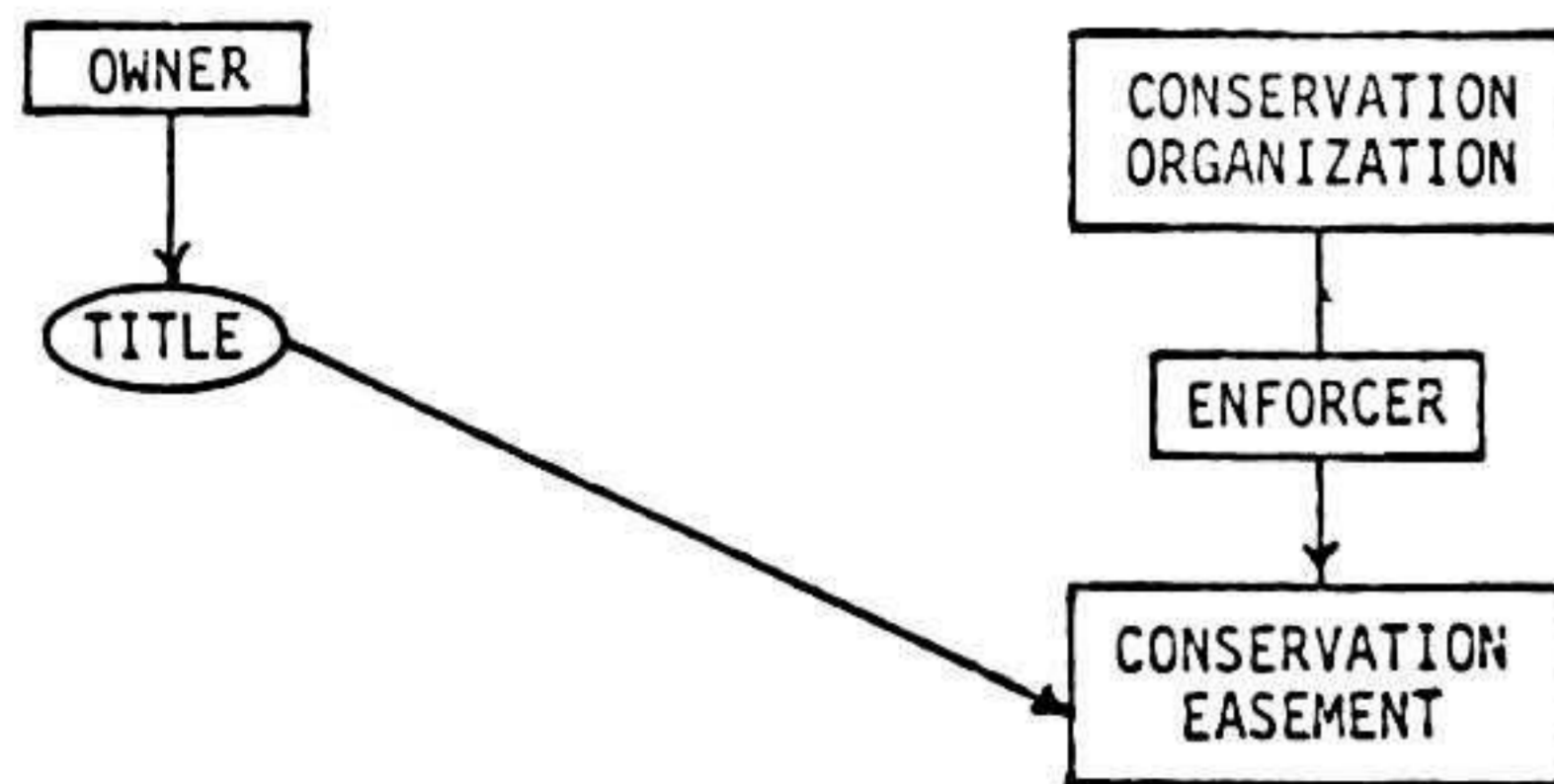
The Weems Creek Conservancy by itself or in partnership with the Maryland Environmental Trust (MET), could educate landowners about the advantages of donating conservation easements and could seek donations of permanent conservation easements from owners of properties along the Creek. These easements could permanently protect important resource areas including the shoreline, wetlands, bluffs, and woodland from development.

### Definition

Conservation easements are one of the most significant ways by which local landowners can conserve Weems Creek. They are a personalized, individually tailored mechanism whereby a landowner agrees to protect certain attributes of his land which have a recognized conservation value. Essentially an easement represents one of many rights which a landowner buys or inherits when he acquires his land. This array or "bundle of rights," as it is commonly called, includes selling the land; renting it; bequeathing; and developing it. When a landowner gives a conservation easement he limits or restricts the right to engage in activities that would hurt and which could ultimately

Resource Options	Resource Issues											
	City-County Jurisdictions	Land Values and Taxation	Development With- in Corridor	Development With- in headwaters	Hock Property	Priest Point	Water Quality	Steep Slopes	Wetlands	Other Shore- line Features	Boating	Aesthetics
Conservation Easements		●	●		●	●	●	●	●	●		●
Land Trust		●	●				●	●	●	●		●
Mutual Covenants		●	●		●	●	●	●	●	●		●
Weems Creek Education Projects			●	●	●	●	●	●	●	●	●	●
Special Protection District	●	●	●		●	●	●	●	●	●	●	●
County Zoning and Subdivision Review and Revision			●	●			●	●	●	●	●	●
City Zoning and Subdivision Review and Revision			●	●			●	●	●	●	●	●
Planned Unit Developments				●			●					●
Water Quality Monitoring							●		●			●
Urban Stream Restoration				●			●	●				●
Save Our Streams				●			●	●	●	●		●
Conservation Easement Workshop for Tax Assessors and Local Officials		●	●									
Relocation of Boat Speed Signs									●	●	●	●
Planning Assistance - State			●	●	●	●						
Planning Assistance - Federal	●	●	●	●	●	●	●	●	●	●	●	●
Federal Grants to Local Citizen's Groups			●	●	●	●	●	●	●	●	●	●

## CONSERVATION EASEMENT



destroy the resource. Usually restrictions prevent extensive residential development, industrial development, and commercialization. The degree of restriction will vary depending upon the size of the property and the resource being conserved.

### Landowner Benefits

The Weems Creek Conservancy could stress the many advantages of the conservation easements as an option for local landowners. It is owner initiated: an easement is strictly voluntary. It can be highly selective: an easement may include only a small part or the entire property. Restrictions are not arbitrary: they are based on the goals and objectives of the landowner. Easements are not subject to the changing attitudes of subsequent landowners. Unlike a deed restriction which is owner-enforced, the easement is controlled by a second party - such as MET or the Conservancy - which is responsible for seeing that it is adhered to.

The landowner never loses control of his property. He can sell, rent, bequeath, donate, and continue to use the property in every way, as long as the activities do not conflict with the restrictions in the easement. Often the land under easement can be managed by the second party. The landowner can arrange for a continuous management plan which ensures that the land is conserved in the most environmentally and economically sound way. Although many areas under conservation easement may provide scenic enjoyment for the general public, easements do not require public access to the property.

The Conservancy could also present the economic advantages of easements to landowners if they are granted in perpetuity and if for some benefits they fulfill one of the conservation purposes indicated in the revised Internal Revenue Code, P.L. 96-541, Section 70 (see below). Because an easement would permanently restrict certain types of potential development in the Weems Creek area (depending on the terms of the easement), it may lower property taxes and ultimately federal estate taxes. If it meets a conservation purpose, the easement would be considered a charitable contribution and deductible from the donor's taxable income for as long as six years. In addition, the Maryland Tax Law, Article 81, Section 12E permits Anne Arundel County to give up to 100% property tax credit for landowners who place a permanent easement on

property considered to be in the category of "open space" or "open area".

### Qualifications

In order to be eligible for full income tax benefits, the revised Internal Revenue Code, P.L. 96-541, Section 70, requires that the easement be permanent and fulfill at least one of the following purposes:

- 1) preserve land areas for outdoor recreation by, or education of, the general public;
- 2) protect a relatively natural habitat of fish, wildlife, plants or similar ecosystem; and
- 3) preserve open space for either the scenic enjoyment of the general public or in accord with a clearly delineated federal, state or local governmental conservation policy which will yield a significant public benefit.

Easements on Weems Creek, especially if they constituted a significant portion of the undeveloped shoreline and upland vegetated areas including the Hock property and/or Priest Point, could qualify as a relatively natural habitat, particularly since the Maryland Uplands Natural Areas Study recognized the Hock tract as an important area for ecological studies. Easements along the Creek could also qualify on the basis that as a tributary to the Severn, the

Creek is in accord with a state conservation policy yielding a public benefit. The Severn River has been designated as a State Wild and Scenic River.

To ensure that conservation easements remain a viable option for local landowners, the Conservancy will want to continue its role in monitoring developments which could have a deleterious impact on the scenic and environmental attributes of the Creek. It will also want to press for more inclusive safeguards in the zoning, subdivision, regulations, and other local controls.

Before landowners can take advantage of the state tax credit law for the conservation of "open space," the Anne Arundel County Council would have to pass a resolution or ordinance enacting this law. As part of this enactment, it would have to establish categories of "open space" or "open areas", which can be either geographical or functional.

The State law states that tax credits could only accrue to landowners who give permanent conservation easements to the state, local or federal government. This means that landowners who give an easement to a private organization would not be eligible for tax credits. Because of this condition, it would be best for the Conservancy to work in conjunction with MET and to encourage MET to become the donee of the conservation easements.

The Conservancy could undertake the responsibility of monitoring the easement while MET would shoulder the responsibility of enforcement. MET's enforcement power through the State Attorney General's Office would be a definite asset for the Conservancy, which would otherwise have to pay its own legal fee or rely on voluntary legal help in case of easement violations.

MET has indicated that the permanent retention of the Hock property in its natural state may be a key factor in its decision to accept easements on Weems Creek. The Trust through the Attorney General's Office of the Department of Natural Resources has recently determined that it could hold an easement of the Hock property donated by the State Highways Administration (SHA). The Conservancy could continue its communications with SHA, and encourage it to place an easement on the tract in addition to developing a forest management plan for woodland maintenance and wildlife enhancement.

The Conservancy could also demonstrate to the Trust that the Confluence Area (including Priest Point and properties east of the Ridgely Avenue Bridge) is also a significant conservation area of the Creek and that regardless of whether the Hock property is at present put under permanent easement, much could be done to protect the scenic resources near the mouth.

### Landowner Interest

Judging from the returns of the Attitudinal Survey there is already strong interest among landowners for learning more about conservation easements, especially if they could receive tax benefits. Thirty-six property owners indicated a willingness to hear more about the option. Most of those registering interest own land which is between one and two acres, with some owning up to three and four acres. Interest was fairly evenly divided between the Hock Property Area (west of the Rowe Boulevard Bridge) and the Confluence Area (east of the Ridgely Avenue Bridge) on both the county and city sides. It would appear that the Conservancy with the help of MET could hold workshops for these landowners and other residents along the Creek. The Conservancy may want to circulate the easement guide prepared by MET or else develop one of its own.

A landowner who may be reluctant to give an easement on his property for fear that none of his neighbors will take similar action could be encouraged to place the easement in escrow until a sufficient number of landowners followed suit. From discussions with MET, it appears that a "package of easements," would stand the best chance of meeting the criteria for conservation purposes, upon which income tax benefits are based.

## LAND TRUST

The Weems Creek Conservancy with the assistance of the Weems Creek Neighborhood Associations could begin to take on the functions of a land trust. The trust could purchase critical shoreline properties as they come on the market, resell them with deed restrictions to new landowners, or transfer them to other appropriate trusts or to the city, county, or state at some future time.

### Definition

A land trust is a non-profit corporation which is able to own real property or interests in real property. A land trust can offer permanent protection to selective areas along the Creek. It can also render technical assistance to local landowners by helping them develop long-range plans for the conservation of part or all of their property and for the realization of an economic return from those areas not being conserved. In addition, a land trust can itself undertake or arrange for the long-term management of the property.

### Benefits

A land trust is an excellent way for the Conservancy to manage selected areas along the Creek. The members of the trust would be local residents whose commitment to conserving the Creek would be realized in the kinds of land use decisions the trust would make. As members, local landowners



would establish the trust's goals and objectives; be aware of critical parcels coming on the market; and know which landowners wanted to place conservation easements on their land.

At a time when most landowners want to receive some kind of remuneration for conserving their land, and when government is only marginally able to meet these mutual needs, the land trust can play a vital role. Through the establishment of a revolving fund, a Weems Creek land trust can acquire land either in fee simple or at bargain sale (a sale at less than full market value). If the trust so chooses, it could decide to hold permanent title to the land, and lease it to subsequent tenants. Trusts which choose this option are often called "community land trust." These trusts reserve the land for future and permanent benefit of the entire community. They typically lease land to tenants for 99-year renewable leases. Improvements to the land as well as the buildings are the property of the tenant, but the land itself remains with the trust.

A Weems Creek land trust could decide to hold title to land only temporarily, and thereby continually replenish its funding source when the land is sold with a deed restriction to another buyer. This buyer could be a private party or, under certain circumstances, could even be the city, county, or state, which may not have the ready cash available but which may regard the property as important to its own programs and policies. In this role the trust functions as an intermediary.

Because a land trust could respond quickly to land that comes on the market--either by having ready cash available or by being able to quickly generate community funding--it could be a critical force in slowing down unwanted development.

In addition to acquiring title, a Weems Creek land trust could also accept conservation easements if the trust becomes a nonprofit organization. (Regarding the trust and/or Conservancy's role in accepting easements, see the qualifications section under Conservation Easements.)

In conjunction with an existing land trust such as the Maryland Environmental Trust or the Natural Lands Trust, a Weems Creek trust could offer technical assistance to landowners by providing them with individualized master plans for the future use of their property. The master plan could: (1) identify the owner's objectives concerning present

and future ownership, uses and management; (2) describe existing property conditions and characteristics; (3) assess the property in relation to its surrounding area; (4) explain the problems and opportunities the land presents; (5) analyze and recommend the best options for the future use of the land; and (6) prepare a master plan document describing how each area of the land could be managed and how and when implementation could occur. This kind of planning service would help the landowner decide which areas should be conserved, and which might best be sold for development. It is a way to demonstrate to some landowners that the Conservancy is not blind to their needs for realizing some economic benefits while still conserving essential features and areas. This kind of technical assistance could be particularly helpful to owners of large-acre properties.

A Weems Creek land trust would be a recognized legal entity with its own board of directors. As such, it can exist beyond the changes in its membership; its motivation is not dependent on a few key personalities. Because of its legal status, trust members are not personally held liable for challenges to actions by the trust. If the trust is at any time disbanded, its assets--including the land--would be transferred to another non-profit organization with similar conservation purposes. This potential transfer could be anticipated through the trust's by-laws.

### Qualifications

The most serious issue facing the Conservancy in considering the viability of starting a land trust is raising enough money to begin a revolving fund. Some of the foundations in Maryland which have contributed to conservation-related activities are listed below. In addition, members could consult the 1979 Annual Index of Foundation Reports (approximately 300 foundations compiled by the Office of the Attorney General, 1980), and the 1979 Supplemental Information Index: to the Annual Index Foundation Reports.

If the Conservancy decides to seek foundation support and if it wants the land trust to have the ability to accept conservation easements, it should obtain tax-exempt status. Along with consulting an attorney who has had experience with non-profit, tax exempt organizations, the Conservancy could read "How to Apply for and Retain Tax Exempt Status for Your Organizations," a Department of the Treasury Internal Revenue Service Publication 557. Copies can be obtained directly from the IRS district office:

Internal Revenue Service  
EP/EO Division, PO Box 13163  
Technical and Service Staff  
Baltimore, Maryland 21203

The trust will want to be classified by the IRS as "501 (c) (3)," which means that it is recognized as a

conservation organization that is appropriate for holding a conservation easement.

Other books which could be referred to on the subject of establishing and operating a nonprofit, tax-exempt organization are: The Nonprofit Organization Handbook, The Law of Tax Exempt Organizations, and Nonprofit Foundations: A Tax Guide for Tax Exempt Organizations.

Most land trusts which buy, sell, and manage land require staff. At the beginning this could include one part or full-time person. The trust would need to raise funds to support this person. Many trusts, however, can keep their operating costs down by encouraging volunteer workers.

In order to be assured that the trust is not randomly purchasing land or accepting conservation easements, it could request technical assistance from an existing trust, or planning assistance from the city, county, or state to identify and prioritize key properties and areas for acquisition. It should be kept in mind, however, that sometimes the trust may want to purchase a property or accept the donation of title to property which is not essential to the conservation of the Creek. In that case the trust could hold the property until such time as it could profit from its sale to another buyer. Profits from this sale would be added to the revolving fund.



## MUTUAL COVENANTS

Individual landowners along Weems Creek, starting with members of the Weems Creek Conservancy, could agree to enter into mutually restrictive agreements -- mutual covenants -- to limit future development on part of their properties.

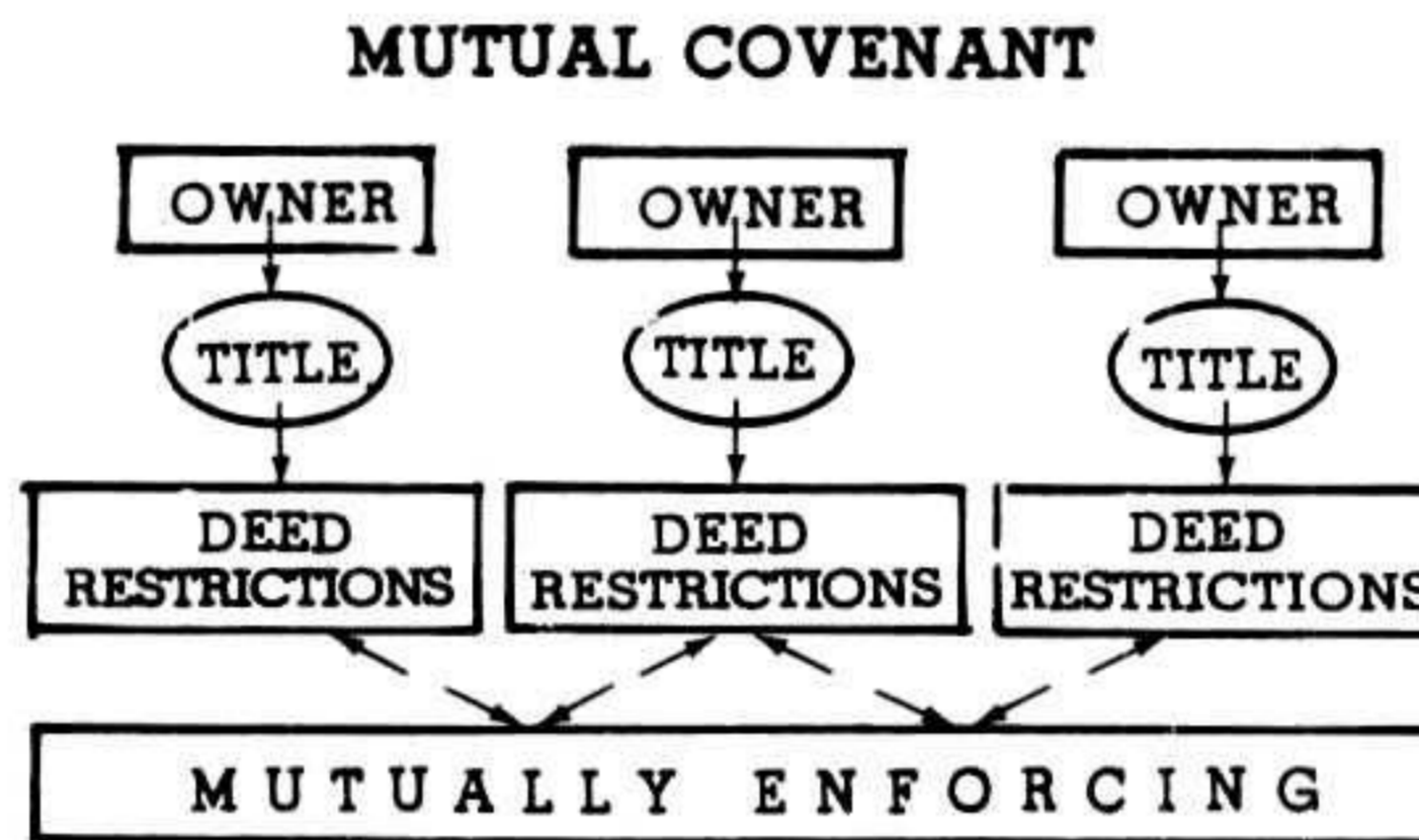
### Definition

Like conservation easements, mutual covenants are restrictions which a group of landowners voluntarily agree to place on part of all of their properties in order to minimize unwanted development. Recorded in the County Registry of Deeds, they are binding on subsequent owners, as long as the neighborhood does not substantially change in such a way as to render the original intent of the restrictions null and void. Unlike conservation easements, mutual covenants are not enforceable by a second party, but rather by the owners themselves.

### Benefits

There may be certain landowners on Weems Creek who are not ready to enter into a permanent agreement to restrict development on their property. A mutual covenant is less binding than an easement because it is owner monitored and because a court may be less likely to enforce the covenant if it thought the

neighborhood had so changed as to call into question the original benefits of the restriction. A mutual covenant may not be as good an option for long-term conservation of the Creek because it is less enforceable and less permanent than an easement. Nonetheless, it may be a very useful first step for wary and cautious landowners to take. It will "buy time" until other options gain more acceptance and community support.



Property owners who place mutual covenants on their land should receive property and estate tax benefits similar to those accorded landowners with conservation easements.<sup>1</sup>

### Qualifications

Because mutual covenants do not provide permanent restrictions, owners will not be able to claim a loss in market value as a charitable deduction on income tax returns.<sup>2</sup>

As mentioned earlier, mutual covenants are not as enforceable as conservation easements. Enforcement ultimately depends upon the determination of the individual owner. Neighbors who want to put mutual covenants on their land should understand clearly that each one will in effect be monitoring the other, and that this process is as much one of "good faith" and trustworthiness as anything else. Should one among the group break the terms of the covenant, it could lead to enmity among all. As one guide to voluntary protection put it, mutual covenants "require the presence of the right combination of people and circumstances."<sup>3</sup> However, considering the results of the Attitudinal Survey in which the majority of landowners indicated an intention to stay on their property, and an interest in knowing more about tax benefits for restricting the use of their land, mutual covenants could be offered as an alternative to easements for certain parties on Weems Creek.

<sup>1</sup> Critical Areas Program, The Landowner's Options: A Guide to the Voluntary Protection of Land in Maine. Augusta, Maine: Maine State Planning Office, 1978, pp. 10-11.

<sup>2</sup> Ibid., p. 11.

<sup>3</sup> Ibid.

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## WEEMS CREEK EDUCATION PROJECTS

The Weems Creek Conservancy and the five Weems Creek neighborhood associations could sponsor and organize a series of education projects about Weems Creek. These projects would provide an ongoing format for communicating to local landowners, city, county, and state officials, the resources and attributes which make the Creek special, the threats to them, and some of the ways whereby the resources could be protected in the face of increased city and county growth.

### Awareness Building

Annual or semi-annual awareness days could be organized which include boat trips, walks along the corridor, and house tours. These awareness days could focus on different themes such as the ecology of a tidal estuary; water quality monitoring; history of settlement and land use; impacts of development; shoreline protection; and the interrelatedness of the Creek and its watershed. Art and photo essay exhibits with "Weems Creek in the 1990's" as a theme could convey to residents and visitors visions of desirable futures for the Creek. Local residents could learn how to take water samples and chart their results, thereby assisting local government efforts to enforce water pollution laws.

The awareness building could focus

entirely on the Creek or be part of a larger city, county or Severn River Watershed initiative. This broader effort could feature Weems Creek as one among other Chesapeake Bay creeks in urbanizing locations, or it could demonstrate similarities and contrasts between the Creek and other tributaries of the Severn.

The guides and speakers could be members of the Conservancy or specialists from the city, county, or state governments, local schools, and universities who have expertise on the theme chosen for that day.

### Landowner Initiatives for Conservation

Workshops and forums could be held to educate local landowners about those conservation options which can be primarily initiated and carried out by the landowners themselves. These could include a series of presentations about conservation easements, mutual covenants, and a local land trust. (Each one of these options is discussed separately.)

Architects and landscape architects could discuss different ways by which the setback and siting of houses, - whether single family or multiple family - their design, texture, and color could either enhance, be integrated with, or destroy the scenic qualities of the shoreline. Landscape architects could also give lectures about the kinds of native vegetation which are appropriate as

plantings in both the corridor and wetlands. They could also discuss the roles each kind plays in providing habitats for wildlife.

County and city sedimentation control officers could discuss with local residents the advantages and disadvantages of different kinds of bank stabilization structures. Handbooks explaining shore erosion control could be distributed to all residents within the corridor, either for a minimal fee or at no charge. The Conservancy and association members could either prepare their own guide or else obtain copies of Shore Erosion Control: A Guide for Waterfront Property Owners in the Chesapeake Bay Area for local distribution. This handbook has been prepared by the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Chesapeake Research Consortium and Water Resources Administration.

The Conservancy could arrange for lectures by representatives of different state agencies about the different kinds of technical assistance they offer to landowners. State assistance in wildlife management, offered by the Maryland Wildlife Administration, and in forest management, offered by the Maryland Forest Service, would be particularly appropriate for those owners of stretches of woodland and wetland, including the Hock property and Priest Point. For example, a Forest Conservation Management Agree-

ment with the Department of Natural Resources may be highly beneficial to the owner of Priest Point, who currently has to pay taxes on the property. Under this agreement an owner of five or more contiguous acres of woodland who agrees to manage his resources according to a plan prepared by the Maryland Forest Service may not have his tax assessment valuation increased during the time of the contractual period.

In order to increase landowner awareness of how government agencies could help them conserve the Creek, the Conservancy and neighborhood associations could develop a guide which would key resources and issues to the appropriate state, county, and city agencies. Summaries for each agency would explain how it could offer assistance and guidance about the specific resource or issue. Contacts and phone numbers could also be included.

#### Slide Show

The Conservancy could prepare a slide show for public distribution which would show the Creek's resources and special features, depict some of the most critical issues affecting them, and describe a variety of options for conserving the Creek. The show could be between 10 and 20 minutes and could serve as a prologue to a series of meetings and discussions with local landowners and city and county officials.

## City - County Options

### SPECIAL PROTECTION DISTRICT

The city of Annapolis and Anne Arundel County could jointly designate Weems Creek as a special protection district. The district would have a unified set of land use controls to ensure that the high scenic and natural resources of the Creek are uniformly protected on both sides of the waterway.

#### Definition

A jointly designated special protection district of Weems Creek could be a carefully delineated geographic area with established boundaries on both sides of the corridor. The purpose of the district could be to help conserve selected natural features and scenic areas, and to further promote the public health, safety, and welfare.

#### Joint Designation

Because the district would require both city and county designation, the Creek could become recognized as a single physical, social, and ecological unit rather than as a split jurisdiction with varying regulations and land use controls governing its conservation and growth. This kind of joint designation could be a precedent-setting example throughout Maryland. There are no other joint designations among

split jurisdictions in the rest of the state.

#### Joint Regulations in Relation to Existing Controls

Both the city and county could cooperate to design parallel regulations and controls in light of each jurisdiction's own development goals and needs, existing land use within each corridor and those natural and scenic features deserving special attention. To the extent possible, the joint regulations could modify existing regulations and mold them to fit the needs of the Weems Creek area--a relatively undeveloped waterfront community in a rapidly developing location. For example, the county's General Development Plan could still guide the county's thinking about Weems Creek as a logical development location. But the regulation of that development could be targeted to protecting special features from adverse developments. Thus additional regulations could concentrate on protecting the shoreline and the waterway itself from erosion, runoff, and pollution; retaining a vegetated band along the shoreline; and only minimally disturbing existing woodland in the upland area. Better design solutions could be incorporated in the subdivision regulations to ensure that contiguous tracts of open space are retained through clustering on areas smaller than 10 acres. Height regulations could be established which prevent the presence of any building



*Sketch showing use of vegetation as buffers near an urban wetland area.*

in the district from intruding upon the vista down to or up from the waterway. Only previous types of pavement could be permitted for developed areas over a given size.

As another example, the residential zoning on both sides of the Creek could still be the primary permitted use but the density within certain zoning districts, namely the R-5 on the county side and the R-1 on the city side, could be reduced. Another alternative could be to enlarge the size of zoning districts which have less density potential and reduce the area of the highest density zones. Spot-zoning could be prohibited. In keeping with current zoning regulat-

ions, industrial uses could be excluded and no other commercial zones could be established.

In another example, the city could establish better monitoring and enforcement procedures for its erosion and sediment control regulations to prevent situations like the one at Boston Heights from recurring. In this case the county and city could coordinate their inspections within the Weems Creek Watershed to insure that both sides of the Creek are being monitored equally.

One problem to consider in creating a special protection district is that of defending it against legal chal-

lenges, especially on the basis of exclusionary zoning or a taking without just compensation. The extent to which regulations within the district resemble land use controls in similar city and county locations, and the extent to which the district can be incorporated into a general development philosophy of the city and county will mitigate those legal challenges.

#### Joint Goals and Objectives

A vital prerequisite to establishing a special protection district would be agreeing on the objectives. Environmental, aesthetic, and health, safety and welfare rationales could be broad-based goals, but the city and county would want to outline what aspects of those goals, what objectives are most appropriate to Weems Creek.

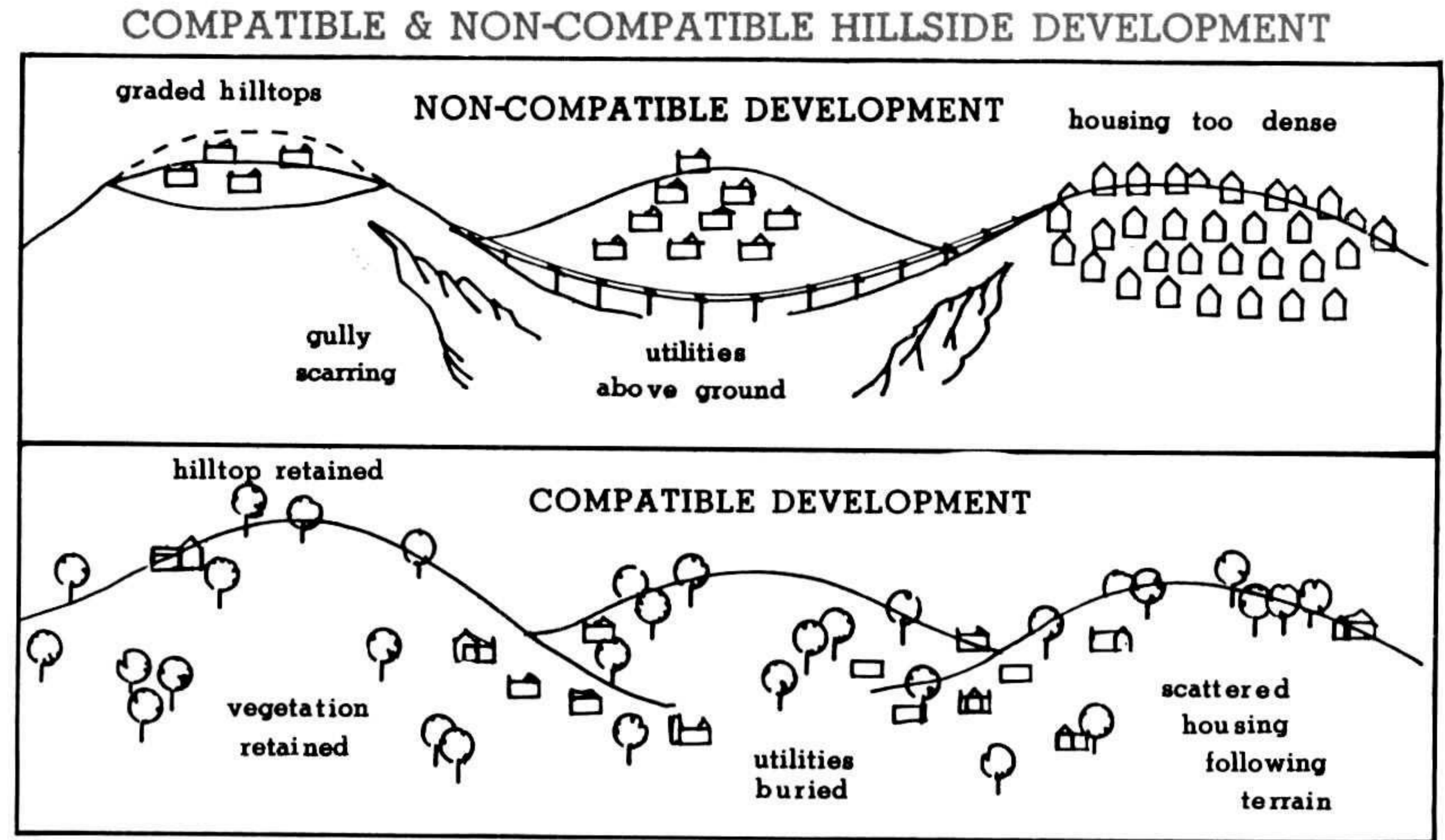
#### Identification of Natural Features and Their Functions

A list of natural features and their functions which are considered important enough to the community to be regulated could be prepared. The features could include: steep slopes; highly erodable soils along the banks, inlets, woodlands, wetlands, bluffs, and the waterway itself. In addition to identifying the features, their environmental functions could also be enumerated. By spelling these out, the city and county will be in a better position to identify the most relevant options for protecting them.

If, for example, a fuller protection of wetlands is important because wetlands provide species diversity and help to purify water, regulations could be established to protect the wetlands from either being filled in for development or from becoming a sink for runoff and sediment. Set-backs and buffer zones between the wetlands and allowable development are ways to protect these functions. If, for example, building on slopes over a certain percentage of highly erodible soils could threaten the health, safety, and welfare of dwelling occupants, then a prohibition of building on these slopes and soils could be written into the subdivision regulations.

#### Performance Standards

The city and county could decide at what point to establish outright prohibitions against development and up to what point design solutions could be permitted if they protected those special functions of the identified resources. Because performance standards emphasize the way in which natural areas function and perform, they could increase or decrease dwelling units per acre in a given area, thus providing greater flexibility for developers and greater security for the most vulnerable natural resource areas. For example, if one function of the upland woodland is to provide habitats for certain kinds of wildlife, building in that area could only occur in a way which maintained



that function of the woodland. If development would destroy or impair that function, it would not be allowed as proposed. Although performance standards require a considerable amount of care and knowledge in understanding the roles of the various resources along the Creek and in anticipating the impacts of different kinds of development on them, they could provide an option for regulating these resources which could preclude or be super-imposed upon the existing zoning. Performance standards are one way to satisfy the growth needs of the county and city and the conservation needs of the Weems Creek landowners.

#### Density Transfers

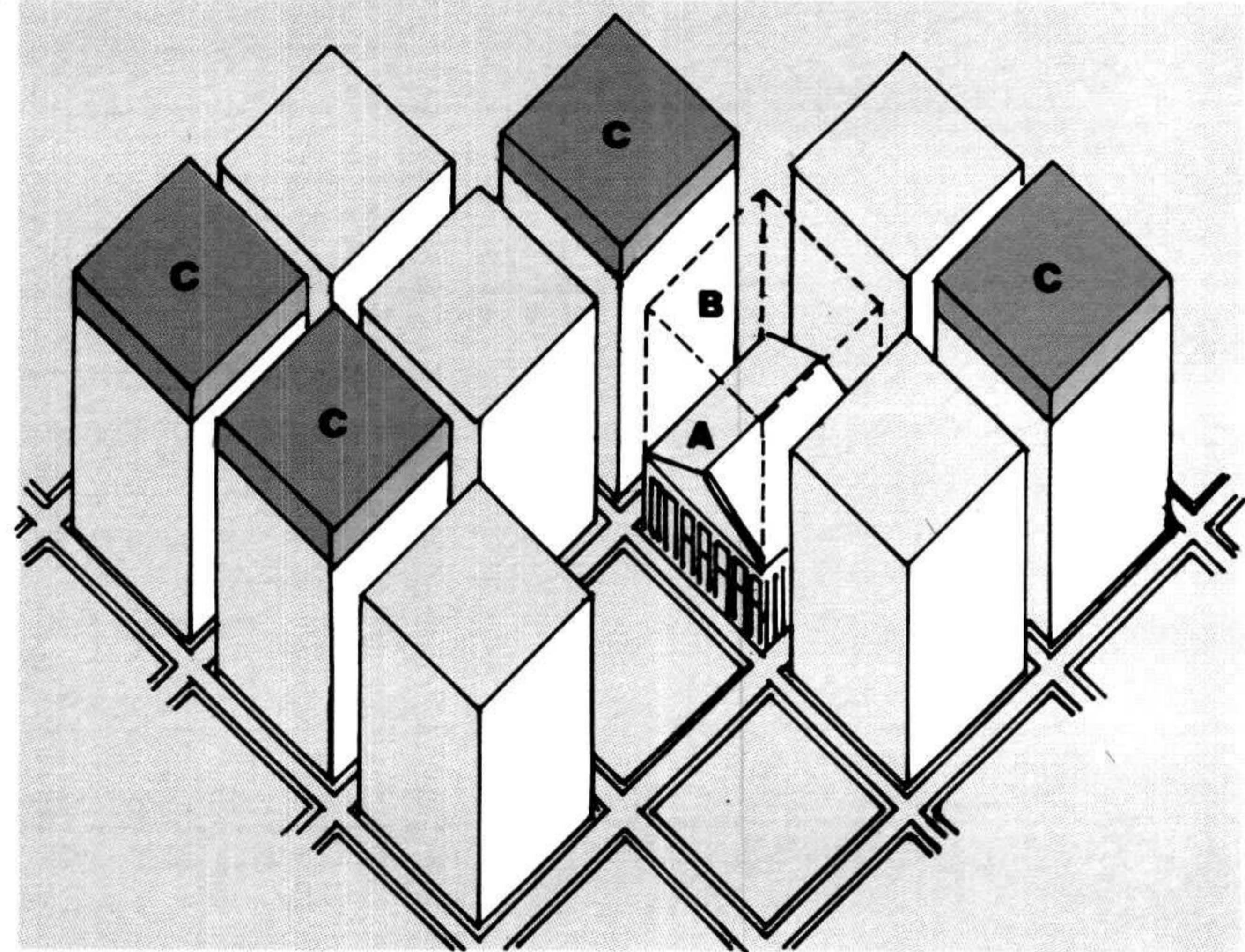
Density transfers permit unused allowable densities in one area to be used in another area. The city and county could consider permitting two kinds of density transfers. The first kind would enable landowners who may be regulated from developing within proposed protected areas on their property, the right to increase the density in another area of their property. By this method, the average density per acre would remain constant, but greater density in a less sensitive area would be allowed to compensate for restrictions on development in more environmentally

## DENSITY TRANSFER EXAMPLE

density transfer could result in clustering regulations which were adapted to properties along the shoreline which were less than ten acres but greater than an established minimum.

While the first kind of density transfer situation could benefit landowners with large-acre properties, another kind of density transfer option could help all landowners within a special protection district. Transfer of development rights is a way by which landowners in a defined area such as district, who are prohibited from certain kinds of development, could transfer their development rights to landowners in zones where development is encouraged. For example, as a result of a special protection district, landowners on Weems Creek may be prohibited from using their development potential in woodlands, wetlands, and steeply sloping areas. Landowners in the commercial and industrial zones within the city and county could pay landowners in the district for their unused development rights, and accordingly, could increase their own development potential. Rather than designating all the commercial and industrial zones within the city and county as potential transfer or receiving areas to the Weems Creek Watershed or to an area no greater than the adjoining watersheds. Given the fact that the headwaters area of the Creek on the county side is slated for an industrial development

*Example of the use of transferred development rights for historic preservation: the rights to be transferred (B), from a landmark building (A), are given to other sites and appear as zoning density bonuses (C), on other buildings.*



park and increased residential use, the county would already have an established receiving area. The right kinds of incentives accorded developers and businessmen in this area who were willing to buy development rights from Weems Creek property owners could make the density transfer option very attractive.

By this option, local landowners within the district would have less of a basis upon which to challenge

the regulations as being unconstitutional. In addition, density transfers could be a good compromise by which the county and city could meet their growth objectives and still protect the Weems Creek shoreline and corridor. The city and county could use Weems Creek as a test case for the transfer of development rights option. If successful, they could try it in other waterfront communities which are also committed to conserving their resources.

## HEIGHT LIMITATIONS EXAMPLE

*Preserving scenic vistas in San Francisco Bay Area by height limitation zones.*



### Scenic Views

Scenic vistas from the land to the water and from the water to the land are important attributes to Weems Creek. As part of the special protection district, a scenic viewshed could be established which could set forth a view reference and framing lines marking the upper, lower limits and breadth of the views to be conserved. Both the city and county could pass a scenic view ordinance to

be applicable to the district. This ordinance could be similar to the one in effect in New York City, where a group of Special Scenic View Districts were created within which the height of buildings, signs, or other structures could not obstruct a specified view as seen from a specified view reference line.<sup>1</sup>

<sup>1</sup>New York City Planning Commission, Preservation of Natural Features and Scenic Views in New York City, November 1974, p. 25.

### Aesthetics

The city and county could establish design standards for integrating new homes with the existing topography. The standards could prohibit homes from being built on the crests of bluffs or steep slopes, to keep from drawing undue attention to the structure at the expense of the landform. Builders of new homes could be encouraged by different kinds of incentives to build facades with textures and colors which will blend into the landscape rather than being obtrusive.

A special protection district board could have regulatory powers of its own. However, this may necessitate charter changes, and call for more responsibility than members of the Weems Creek Conservancy have thus far indicated they would want to have. It would also be less of a precedent-setting example of other Anne Arundel County and Annapolis waterfront communities which may want a greater role in the decisionmaking process about their future land use, but which are not ready or willing to assume full-regulatory powers. The assumption of full-regulatory powers by the board might also give Weems Creek the appearance of a special exception to the ground rules of city and county. One of the goals of the Weems Creek district could be to serve as a model for other communities in ways which did not threaten the current regulatory powers of their local jurisdictions.

## COUNTY ZONING AND SUBDIVISION REVIEW AND REVISION

Anne Arundel County could review and revise where necessary its zoning and subdivision regulations to ensure that fostering contained growth in waterfront communities, as recommended in the General Development Plan, is not occurring at the expense of natural resource protection, as also recommended in the General Development Plan.

As a semi-rural county subjected to mounting growth pressure, Anne Arundel County faces great challenges in the next 5-10 years. Like other jurisdictions faced with this pressure and containing valuable shoreline real estate and prime farmland, the county faces the dilemma of deciding which to develop and which to preserve. The General Development Plan is clear in its preservation of prime farmland in the western part of the county. But it communicates two different messages about its rivers and shorelines. On the one hand, riverine areas are those where low to high residential growth is anticipated and encouraged through the timed installation of public sewer and water services. On the other hand, the General Development Plan also states as a policy that it will "protect and enhance the scenic qualities of its designated State Scenic Rivers, the Patuxent and the Severn. This policy will help preserve the integrity of the scenic

assets of these rivers and the land immediately adjacent to them.<sup>1</sup>

In order to resolve these conflicting goals, the county could: (1) rethink its development policies along the Patuxent, the Severn, and their tributaries. In particular, it could re-evaluate the proposed timing of public sewer and water services on Weems Creek and consider reducing the number of dwelling units per acre in the R-5 zone or reducing the size of the zones; (2) establish more stringent controls over those resources identified in the General Development Plan and subdivision regulations as being important to the natural environment and environmental quality of the county; and (3) adopt creative design solutions which could both accommodate growth and assure the integrity of the natural resources.

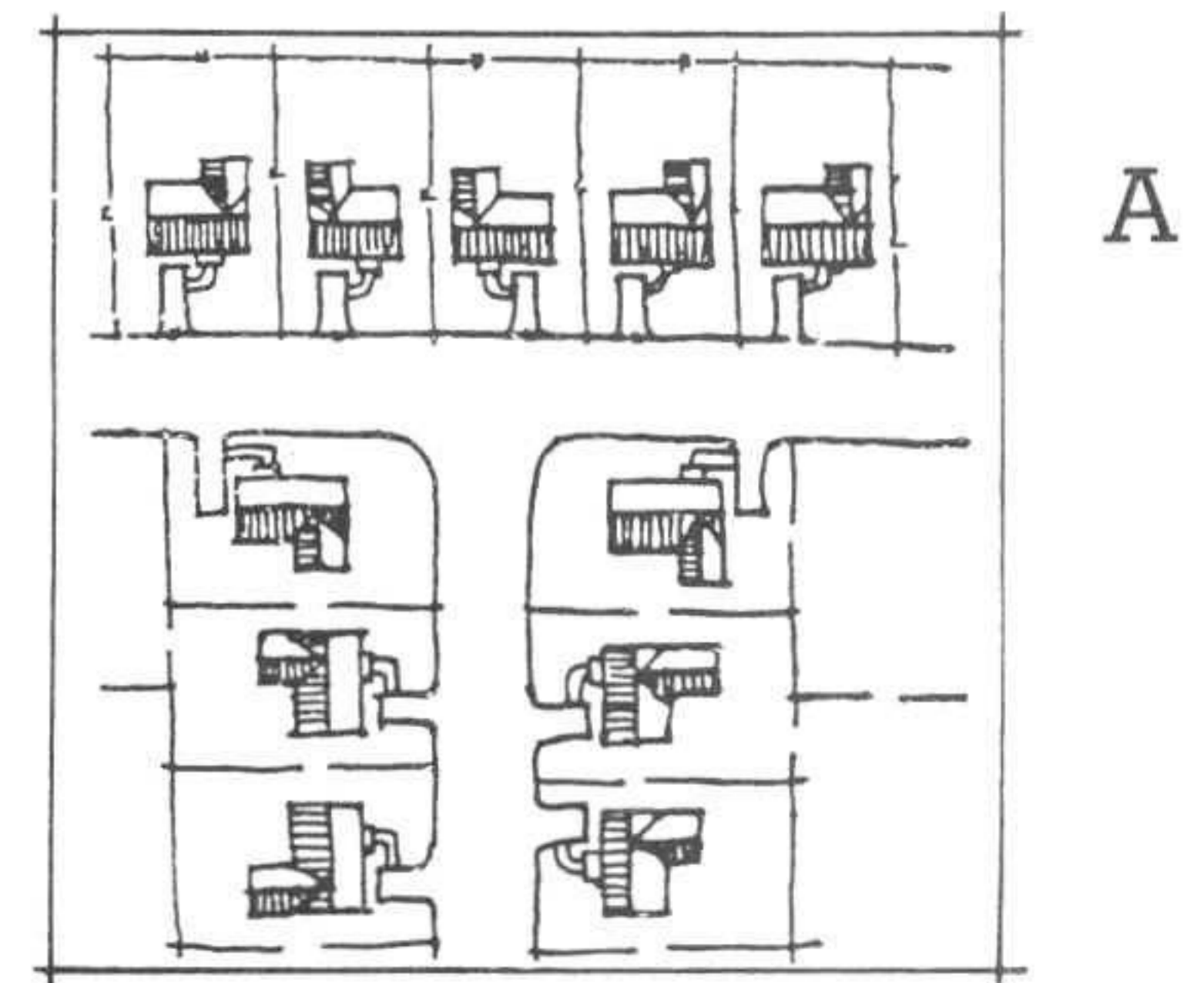
Some of the resources on Weems Creek which need better protection in the subdivision regulations are: wetlands, steep slopes, and woodlands. Buffer zones between wetlands and developed areas could be established. Prohibitions against building on slopes greater than a certain percentage could be incorporated into the subdivision regulations. Clear-cutting within the floodplain and along the shoreline could be prohibited. A design solution which

<sup>1</sup>Office of Planning and Zoning, General Development Plan for Anne Arundel County, Maryland. July, 1978, p. 46.

could be more finely tuned to the small scale of shoreline environments is clustering. Performance zoning is another way in which development and natural resource protection could be achieved. The county may also want to investigate the possibilities of transfer of development rights. (For further explanation of each, see the option, SPECIAL PROTECTION DISTRICT.)

The county may well decide that it is in its best interest to adhere to the contained development policies of its General Development Plan. Nevertheless, it could ensure that its shoreline environments, especially those on its scenic rivers, receive special conservation attention through revisions to its regulations. Land and water interface zones like Weems Creek are extremely vulnerable to development and require design solutions that are particularly sensitive to their needs.

### LOT-BY-LOT DEVELOPMENT





## CITY ZONING AND SUBDIVISION REVIEW AND REVISION

The city of Annapolis could review and revise where necessary its zoning and subdivision regulations to ensure that the natural resources of its waterfront communities are being adequately protected.

Although the city's Environmental Action Strategy does recognize the need for better controls to protect environmentally sensitive areas, the zoning and subdivision regulations are generally silent on ways to conserve and protect the city's wetlands, steep slopes, woodlands, natural cover, floodplains, inlets, bluffs, and other shoreline features. Special attention to undeveloped shoreline areas, like those along Weems Creek, would seem to be as much in the city's environmental and

health and safety interest as protecting historic areas, which the city does through its historic and conservation residence districts.

Setbacks, buffer zones, cluster zoning, design standards, scenic view districts, and vegetation belts along the corridors are a few of the options the city could adopt to conserve its rapidly disappearing natural features. (For further explanation of these, see SPECIAL PROTECTION DISTRICT.) The city could also consider including regulations for steeply sloping areas in the Land Development and Subdivision Code before they appear in the Building Regulations in order to anticipate construction and erosion problems before the site plans have been approved.

The city could also consider prohibiting spot zoning from occurring in waterfront areas. It could also re-evaluate its R-1 zoning in the Weems Creek area and limit the size of the R-1 area or reduce the number of dwelling units per acre which are permitted.

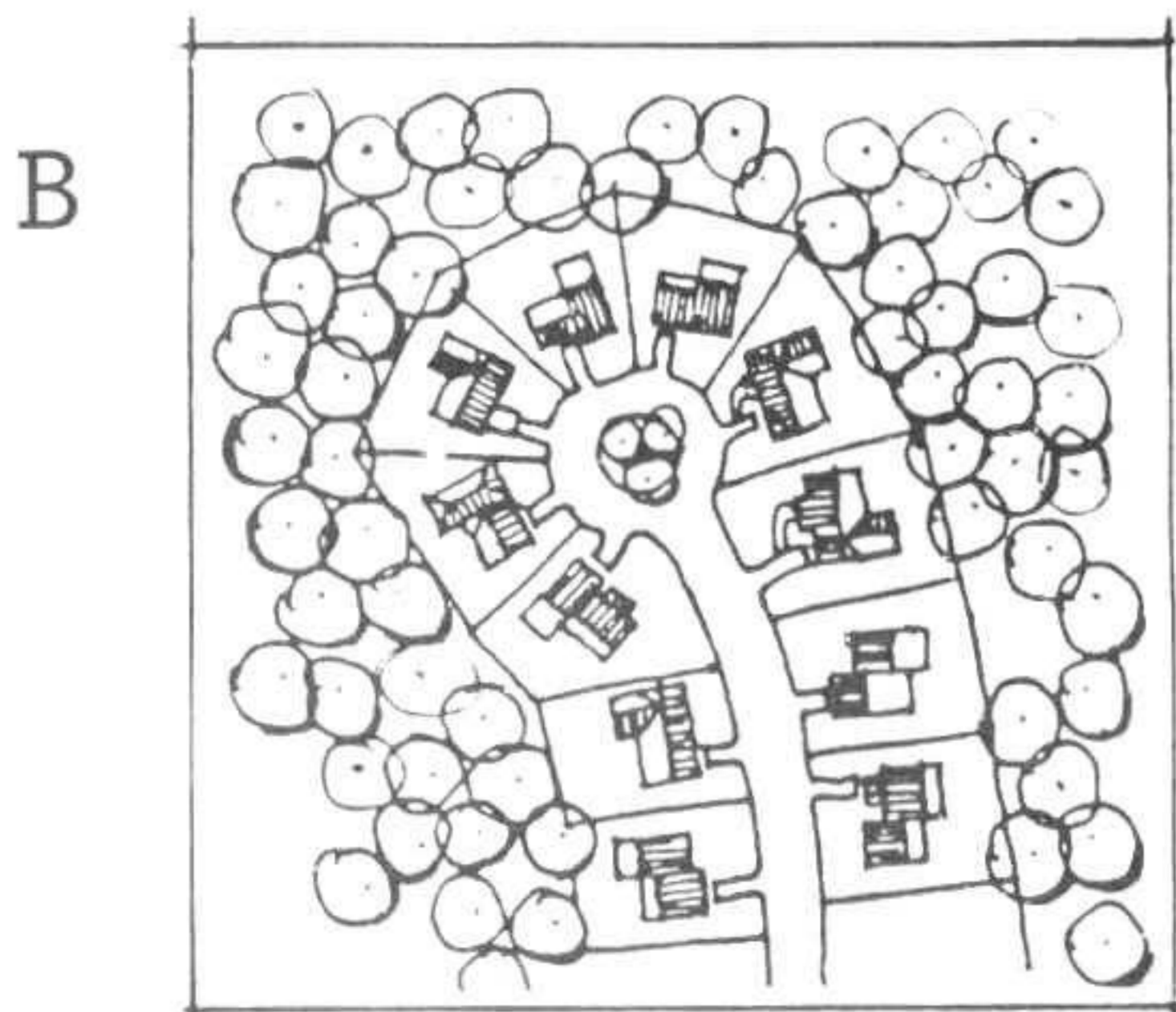
## PLANNED UNIT DEVELOPMENTS

The County and City Planning and Zoning Commissions and the County Economic Development Council could coordinate to find ways to attract planned unit developments within the proposed Industrial Development Districts and Medium Density Multi-Family Districts, parts of which are located within the headwaters area of the Weems Creek Watershed.

At present much of the headwaters area, especially on the county side, is undeveloped. Current county zoning shows that the area will eventually be used for industrial, commercial, and multi-family residential developments. Unless it is carefully controlled and regulated, this proposed intensive development activity could have severe negative impacts on the water quality of Weems Creek, especially since storm water runoff and erosion can fall into one of the Creek's channels and flow directly into the Creek itself.

Whereas small, individual businesses and apartment complexes may have approved on-site storm water retention and erosion controls, they may be more difficult to monitor and enforce than a few comprehensively developed PUD's. Because PUD's permit the planning of a project and the calculation of densities over an entire development, rather than on an individual lot-by-lot basis, county and city officials could have more

### CLUSTER DEVELOPMENT



A) Lot-by-lot development destroys community open space, woodland habitats and visual amenities, and negatively impacts sensitive wetland areas.

B) Cluster development of lots preserves open space, trees and ground cover in sensitive watershed area.

involvement in determining the nature of the development.

Active involvement by the city and county in proposed PUD's could help decide the amount and kinds of paved surface, open space, and circulation patterns. It could also better ensure that the natural features and topography of the headwaters area are respected and that structures are better integrated with landforms. During the site plan review process the run-off and sediment controls for the entire PUD area could be determined and reviewed at one time. Through this approach, the headwaters area, an integral part of the Creek, could be more comprehensively protected.

The county already permits PUD's as special exceptions in its zoning ordinance. The city permits resident planned developments and business planned developments as special kinds of conditional uses. Together, the county and city along the County Economic Council could design incentives and other ways to attract those business complexes and residential developments to the headwaters area which would be willing to work with local planners and officials to ensure the attainment of both development and conservation objectives.

## State Options

### WATER QUALITY MONITORING

The Water Quality Monitoring Division of the Department of Health and Mental Hygiene could conduct water quality sampling tests on Weems Creek to update the last testing in 1977, and to determine the Creek's heavy metals count.

In the face of considerable concern among landowners about point and non-point sources of bacteriologic, heavy metal, suspended solid, and boat exhaust pollution of the Creek, water quality monitoring should be conducted at regular intervals.

At present there are no sampling stations on the Creek. The Water

### URBAN STREAM RESTORATION PROGRAM

The Urban Stream Restoration Program in the Maryland Wildlife Administration could show Weems Creek landowners how to reduce the volume of pollution and runoff from their homesites to the creek.

Of particular concern to the water quality of Weems Creek are erosion, runoff and pollution problems to which landowners themselves may be contributing. The Urban Stream Restoration Program would help them to identify where these problems originate and what actions they could

Quality Monitoring Division could establish one on or near Weems Creek, and routinely sample its waters. Ideally, the sampling would be conducted in the 3 geographic areas: near the headwaters in the Hock Property Area; near the mouth in the Confluence Area; and in between the two in the Rowe Boulevard Area.

In a letter to the Water Quality Monitoring Division, the Weems Creek Conservancy could request that the sampling be undertaken; could explain why it is needed; and could list in order of priority the kinds of testing it is most concerned with. The address of the Division is:

Water Quality Monitoring Division  
Dept. of Health and Mental Hygiene  
201 West Preston Street  
Baltimore, Maryland

take to reduce pollution and runoff.

A MWA staff member could meet with Weems Creek landowners and discuss the nature of the program, which usually takes from 2 to 5 years to complete. For more information, the Weems Creek Conservancy could write or call:

Richard Klein  
Urban Stream Restoration Program  
Maryland Wildlife Administration  
3740 Gwynnbrook Avenue  
Owings Mills, Maryland 21117  
(301) 356-5026

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## SAVE OUR STREAMS PROGRAM

The Save Our Streams Program in the Maryland Wildlife Administration could teach Weems Creek landowners how to monitor water quality on the Creek.

Given the concern for water quality and given the fact that the state may not have the funds to establish a sampling station on Weems Creek for routine testing, it is important that the landowners know as much as they can about monitoring water quality.

The Save Our Streams Program provides a variety of services to local landowners. It can teach them how to take bacteriological samples and it has a laboratory where these samples can be analyzed. It also shows them how to inject dye into sewer lines to see if they are leaking. It demonstrates how to sample the fish population and how to assess the heavy metals count.

In the face of proposed industrial development in the headwaters area, the program can show landowners how

to evaluate proposed discharge permits, how to monitor the effects of the discharge, and how to solicit state action should there be violations.

The Weems Creek Conservancy could initiate discussions with program staff by writing or calling:

Richard Klein  
Save Our Streams Program  
3740 Gwynnbrook Avenue  
Owings Mills, Maryland 21117  
(301) 356-5026

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## CONSERVATION EASEMENT WORKSHOP FOR TAX ASSESSORS AND LOCAL OFFICIALS

The Maryland Environmental Trust (MET) in cooperation with the Anne Arundel County Tax Assessment Office could hold a conservation easement workshop for county and city officials and local tax assessors. This workshop would explain the public benefits of easements and their potential impacts on fair market value and tax assessment. This kind of workshop could be very helpful in encouraging the county to pass a resolution enacting the state tax credit law for residents of Annapolis and Anne Arundel County.

While it is important to explain to local landowners the personal benefits of donating conservation easements, it is equally vital to educate tax assessors and local officials about the implications of conserva-

tion easements on future land use and on property tax revenues. A forum for communicating this kind of information could be a Conservation Easement Workshop.

This kind of workshop has been successful in other states throughout the Northeast. A conservation easement workshop for tax assessors was held in Maine during 1979, and co-sponsored by the Maine Coast Heritage Trust and the Maine Bureau of Taxation. A recent conservation easement workshop for government officials and tax assessors was held in August 1981, in Clayton, New York as part of an effort to develop conservation strategies for protecting the St. Lawrence-Thousand Islands area. This workshop was cosponsored by the National Park Service and the St. Lawrence-Eastern Ontario Commission.

One outcome of the Maine workshop was a bulletin, Effects of Easements on Just Value, written for tax assessors by the Bureau of Taxation to help them in assessing easement-restricted property. A similar bulletin oriented to state, county, and city concerns could also be written by MET and the county Tax Assessment Office. A stimulus to landowners interested in giving conservation easements is the statewide tax credit law, Article 81, Section 12E. Before this law can benefit landowners, however, individual counties need to enact it. This kind of workshop could generate sufficient interest in the county to pass a resolution enacting the law which would give local landowners 100% tax credit for donating permanent easements to a government organization such as MET.

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## RELOCATION OF BOAT SPEED SIGNS

The Tidewater Administration in the Department of Natural Resources could decide whether the present locations of the boat speed signs at the mouth of Weems Creek are in the best interests of safety and shoreline protection from wake-induced erosion. Depending upon its findings, the Administration could relocate the signs in places which would lead to minimal boat wake on the shoreline. The Tidewater Administration could undertake this in conjunction with Anne Arundel County Office of Planning and Zoning.

Although Weems Creek has posted six knot speed limit signs to be in effect throughout the week, the limits themselves may be insufficient in preventing shoreline erosion caused by boat wake. The recent DNR and county study, The Role of Boat Wakes in Shore Erosion points out that boat wake is as much a function of distance as of speed. It is important to determine whether the location of the signs at the mouth of the Creek are placed so as to cause boats to slow down sufficiently far enough from the entrance to the Creek so as not to generate near maximum boat wakes.

The Tidewater Administration is currently engaged in relocating boat speed signs on Weems Creek on the

basis of latitude and longitude coordinates. While their primary concern is location on the basis of safety, they might also look at the problem from the viewpoint of shoreline erosion since it is not a question of putting signs up, but rather one of relocation.

The Weems Creek Conservancy could write to the Tidewater Administration requesting that it look at the present location of the signs to determine if they are minimizing or maximizing boat wake onto the shoreline, and if necessary where they should be relocated. The Conservancy should contact:

Kathy Fitzpatrick  
Dept. of Natural Resources  
Tidewater Administration  
Tawes State Office Building  
C-2  
Annapolis, Maryland 21401  
(301) 269-2784

The Weems Creek Conservancy could also contact the coastal planner with the Anne Arundel County Office of Planning and Zoning and ask the county for help in determining the optimum location for the speed signs. The county could provide this assistance themselves or decide to undertake it in conjunction with the state.

## PLANNING ASSISTANCE

The Scenic Rivers Program in the Department of Natural Resources could continue to provide planning assistance to the Weems Creek Conservancy in a variety of technical and non-technical ways.

### Study Assistance

The Scenic Rivers Program has already played an invaluable role in helping to coordinate the present study with the National Park Service, and has provided vital research materials and guidance. The Program could continue to serve in this capacity on future studies which the Conservancy may undertake itself or may request be undertaken by private or public organizations.

### Natural Resource Assessment

On a request by the Conservancy, the Scenic Rivers Program could help to identify and prioritize specific features and properties along the Creek which require immediate protection. This kind of service could be particularly helpful if the Conservancy and neighborhood associations decide to form a land trust.

### Program Monitoring

The Program could continue to identify other state and federal programs which might be appropriate to helping conserve Weems Creek. It could also

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bring to the Conservancy's attention any federal or state actions which could affect that area.

### Facilitator

The Scenic Rivers Program could also continue its role as facilitator in helping local landowners and the Conservancy understand the various steps they have to take within State government to achieve certain objectives. The Program could continue to arrange for meetings as the need arises between the state and the Conservancy, and could be available to give guidance to Conservancy members on ways to reach their goals.

## Federal Options

### PLANNING ASSISTANCE

The National Park Service could continue to provide planning advisory assistance to the Weems Creek Conservancy.

As the major contributor to this study, the National Park Service has a strong interest in helping the Conservancy develop options which are most appropriate for reaching its goals. As the need arises, the Park Service could continue to work with local landowners, the Conservancy, the city, county, and state in an advisory capacity to encourage and facilitate those planning processes set in motion as a result of this study.

### Study and Education Project Assistance

The National Park Service could help the Conservancy identify future kinds of studies it would want to undertake, and it could help them to define and outline the parameters of the studies. The Park Service could also read and comment on any written, visual, or oral education projects developed by the Conservancy. It could also provide speakers for some of the education projects designed by the Conservancy.

### Information Assistance

The National Park Service could also make available to the Conservancy any pertinent information it has gathered on Weems Creek which may not be included in the study but which could be useful for future reference. This could include reports, slides, and names of contacts. The Park Service could also keep the Conservancy abreast of any federal actions which might impact the Chesapeake and Weems Creek area and any other federal programs which might provide assistance to the Conservancy.

### Option Assistance

The National Park Service could participate in workshops to explain certain options to landowners and local officials. It could also arrange for appropriate groups and organizations to present detailed information to the Conservancy and local landowners. The Park Service is now acting in this capacity by helping to organize an Annapolis-based workshop on land trusts. This will be conducted by the Trust for Public Land in late 1981, or early 1982. The workshop will help the Conservancy and local landowners better understand how a local land trust is organized, how it functions, and how it can help achieve some of the Conservancy's goals and objectives.



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## FEDERAL GRANTS TO LOCAL CITIZENS' GROUPS

The Environmental Protection Association (EPA) through the Chesapeake Bay Program could continue to make funds available to organizations like the Citizens Program for the Chesapeake Bay which have in the past earmarked grants to local citizens' groups such as the Weems Creek Conservancy for water-related projects.

Over the past three years the Citizens Program for the Chesapeake Bay has given \$25,000 to \$30,000 in

50 to 60 small grants to a variety of local citizens' groups. The money they gave the Weems Creek Conservancy helped it to organize and to arrange for the boat trip on Weems Creek which publicized local concern about threats to the Creek. It also financed their preparation of the brochure, "Planning for the Future." Recently the program has given the Epping Forest Young Forester's Organization -- a neighboring community to Weems Creek -- a small

grant to conduct a study showing the effects of erosion and sedimentation on its waterways.

EPA could be encouraged to continue this kind of funding so that the Weems Creek Conservancy and other conservation groups could initiate and carry on their own conservation efforts. With no overhead, these local grants are a very effective way for federal funds to be spent.

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### NOTES

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# Section VI -APPENDIX-Weems Creek Attitudinal Survey

## INTRODUCTION

The Weems Creek Attitudinal Survey was designed in order to better understand how Weems Creek landowners feel about conserving the special attributes of the waterway and its corridor; what they believe are the issues needing to be addressed; and what they consider to be the ways by which conservation could occur.

The results of the Survey which have been included throughout the sections on resource assessment, issues, and options, have served many functions: (1) They have been an information source for the resource inventory, helping to identify special attributes, threats to them, and their actual locations on the Creek or corridor; (2) they have been an information source on options for

management and conservation, including the present level of landowner willingness to participate in conservation strategies; (3) they have been a way to communicate to landowners that the Creek is a special place and to generate support for future conservation activities; and (4) they have served as an agenda for action, helping to focus on those resources and issues which are most significant and those options which appear to be most realistic.

The survey was intended to be open-ended: the questions were written to elicit subjective points of view. To encourage as much information-sharing as possible, the questions were meant to be asked in-person, during face-to-face interviews.

A number of volunteers from the Weems Creek Conservancy participated in

conducting the survey during June and July, 1981. They divided the Weems Creek corridor into different areas and either conducted oral interviews or left copies with those landowners who wanted to fill them out themselves. Those members who devoted considerable time to this effort are: Jules Bigio, Corinne Bissell, Judith Dean, Jack Francis, Nancy Helmlly, Elizabeth McWethy, Joan Phillips, Robert Preiffer, James Sears and Nanette Sears.

Altogether, 65 out of approximately 100 landowners, including a few renters, answered the survey questions.

The Appendix contains a copy of the survey and the guide for conducting surveys which was given to the interviewers during a workshop held on June 1, 1981, at the Maryland Department of Natural Resources.

## WEEMS CREEK ATTITUDINAL SURVEY

The Weems Creek Attitudinal Survey is a vital part of a local conservation study which is being conducted by the Weems Creek Conservancy (a coalition of five citizen associations), the Maryland Department of Natural Resources, and the National Park Service, Mid-Atlantic Regional Office. The purpose of the study, which was requested by the Conservancy, is to assess what steps should be taken to conserve Weems Creek, including both the water and sur-

rounding land. The study will produce a resource inventory and analysis showing those areas on the Creek where conservation is recommended. It will also present different options whereby local landowners, the city of Annapolis, and Anne Arundel County can best conserve those recommended areas.

The study acknowledges the distinction between preservation and conservation. Whereas "preservation" means

to keep a place exactly the way it is, or to restore it to the way it was at some historic period, "conservation" means to support the retention of certain qualities or characteristics which distinguish a particular place. The Weems Creek Conservancy realizes that some changes to Weems Creek are inevitable, but it wants to retain those aspects which make the Creek special to its landowners.

The study is also based on the premise that private property rights must be respected. Neither the state of Maryland nor the federal government intends to acquire any private land on Weems Creek. Nor do they plan to increase existing levels of recreation. The future of Weems Creek lies primarily in the hands of its landowners. They are the ones whose decisions about their property will largely decide how the Creek will change over time.

That is why some of your neighbors, members of the Weems Creek Conservancy, have come to meet and talk with you about your attitudes and feelings towards the conservation of your local environment. The Attitudinal Survey will provide us with necessary information about whether you think Weems Creek is a special place and whether you would like to see those special qualities retained. Without your help there can be no realistic assessment of how to conserve Weems Creek. With your help we can produce a study which can lead to a meaningful guide to local conservation.

If you have any further questions either about the survey or the study, please contact: Jules L. Bigio, Chairman, Weems Creek Conservancy, 6 Weems Creek Drive, Annapolis, Maryland 21401. Phone number: (301) 266-8368.

Thank you for your assistance.

## WEEMS CREEK

### ATTITUDINAL SURVEY

Name

Address

Phone Number

Interviewer

Date of Interview

Time of Interview

Place of Interview

Owner or Renter of Property

Weems Creek Conservancy Member  
(yes, no)

Length of Residence on Weems Creek

Age(s) (if husband and wife) - either  
exact or range

Occupation(s) (if husband and wife)

Size of Property

Location of Property (mark approximate  
location of map with an "X")

1. Why did you move to Weems Creek?

2. What qualities about Weems Creek  
(including creek and corridor) are  
important to you?

3. Where do you find these qualities? (Mark on map where qualities are. They could include entire creek or specific locations. Be sure each mark is labeled with the specific quality.)

4. Have there been any threats to these qualities recently (within past five years)? What are they?

5. Where do you find these threats? (Mark on map where threats are. They could include entire creek or specific locations. Be sure each mark is labeled with the specific threat.)

6. If not already covered in question 2, are there any areas of:

- high scenic/aesthetic value?
- high recreational value?
- high historic value?
- high wildlife value?
- high plant value?

Explain why these areas are special.

7. Where do you find these special areas? (Mark on map where areas are. They could include entire creek or specific locations. Be sure each mark is labeled with the specific quality.)

8. What do you think should be done to maintain or encourage those qualities which you think are important and areas which you've identified as having high value?

9. Who do you think should be responsible for retaining those qualities and areas?



10. How do you feel about the existing zoning (a) in you area; and (b) around the creek generally?

11. Are you planning to sell or subdivide your property in the near future? If subdivision, how many lots, what size?

12. Do you know of any property(ies) along the creek that may be sold or subdivided in the near future? Give the name(s) of owner(s) and mark on the map.

13. Would you be interested in learning more about how you can receive substantial tax benefits for restricting development on a certain portion of your property?

14. Would you be more willing to restrict development on your property if your neighbors were also willing to restrict development on theirs? Please explain your answer.

15. What would you like Weems Creek to look like, be like (a) while you reside there; (b) for the next generation?

16. Would you like a copy of the survey results (study itself) when it is completed?

## WEEMS CREEK ATTITUDINAL SURVEY GUIDE FOR INTERVIEWERS

### I. Initial Contact

a. Because one of the most important purposes of the survey is to understand how the landowners would like the creek to be in the future it is important to contact as many of the landowners themselves as possible in your area. Do not exclude renters who may be currently residing on the property but wherever possible, try to contact the property owners. This may require sending a letter and survey to the landowner if the person is not living on the property.

b. Call first to make an appointment. Don't just "drop by".

c. Over the phone explain who you are:

Weems Creek neighbor, resident; give specific locale if it seems important, such as Admiral Heights, Wardour.

Even if you know the person--if he/she is a friend or neighbor--explain clearly the group you represent, and why you are interviewing him/her.

Weems Creek Conservancy member. If you know the person is not a member, briefly explain the purpose of the Conservancy (a few sentences).

d. Over the phone explain your reason for calling (a general under-

standing will have been conveyed through your previous statements):

Weems Creek Conservancy is participating in a study which will present options for the conservation of Weems Creek.

An important and vital part of that study is the Attitudinal Survey, which is being given to all landowners around Weems Creek. (Summarize the introductory statement on the survey.)

As a landowner, your input is very important.

The survey will take no more than one hour.

e. Set up the appointment. If the person is uncertain about being interviewed, suggest that you will leave the questions with him/her and give person time to see what the questions will be.

### II. Face-to-Face Interview

a. Review the purpose of the survey (let the introductory statement be your guide).

b. You may need to provide verification that you are a member of the Weems Creek Conservancy. Point to the letterhead on the introduction of the survey.

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c. Summarize the nature of the questions you will be asking:

some background information

questions on why Weems Creek is special

questions on any concerns they might have about the creek

questions on what do they think should be done about those concerns

questions on what they may be interested in doing

d. Distinguish between "preservation" and "conservation". See introduction. You may want to explain this at the beginning or during the conversation.

e. Emphasize that the questions are meant to be open-ended. Though a member of the Conservancy, and even if you are a friend, you have no expectations about what your interviewee might say. You are not looking for answers that you want to hear, but you want the person to express what he/she thinks.

f. Wait for the person to answer your question. Allow silence. Let the person think. Let the person express himself/herself in his/her own way. Avoid putting words in his/her mouth.

g. Rephrase questions if necessary (see next section). Examples are fine as long as they don't connote a certain expectation for a certain kind of answer.

h. If there are any questions the interviewee does not want to answer, make a note of the reasons and go on to the next question.

i. If a person digresses or rambles, diplomatically bring him/her back to the main point. Remind him/her that there are other questions you must ask, and that all the landowners will be asked the same questions.

j. Try to communicate care, concern, interest about what they say.

k. Write comments in the space provided. If you need extra space write on the back of the sheet numbering the questions. If you can, occasionally record a direct quote of something said which is important. If not, put the comments in your own words.

l. After questions are asked, and if not already mentioned during the interview (see question 13 in the next section), tell the person that there will be a Conservation Strategies Workshop to be held in July which will further explain certain options which landowners have for conserving Weems Creek.

### III. Attitudinal Survey Questions

a. Record background information with short answers.

Age. If someone asks why you want to know his/her age, explain that the information will help to understand if landowners are mostly young (and may be transient) or near or at retirement (and may remain) or a mix of ages.

b. Question 1. What attracted the person to Weems Creek?

c. Question 2. "Quality" means "special feature of characteristic." Let person communicate qualities without your prompting.

d. Question 4. "Threat" means actions which are or which could endanger a special quality, feature, or characteristic.

e. Question 6. The purpose of this question is to bring to mind other qualities which may have been omitted in Question 2. This question requires some prompting from you.

f. Questions 3,5,7. Be sure these map questions are clearly labeled. During the interview - label "Q" for quality; "T" for threat; and "S" for special area. After the interview - go over the outlines with colored markers so that they are easy to read. Color "Q" areas green; "T" areas red; and "S" areas black.

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g. Question 8. Encourage person to think about each quality and special area rather than making a general comment about all of them. Recall each one if necessary.

h. Question 9. For example, public-local, city, county, state; private-landowners themselves, conservancy.

i. Question 10. You should familiarize yourself with the zoning of your interviewee's area in case he/she does not know what it is.

j. Question 13. If yes, talk about the proposed Conservation Strategies Workshop in July which will explain what the benefits are and how landowners can go about conserving their land.

k. Introduction. Leave introductory statement behind for future reference.

l. Question 17. What is your assessment of the landowner's interest in and commitment to conservation? This question does not appear in the survey itself. It is your own appraisal and assessment. Write it out on a separate sheet of paper after you leave the interview. Attached it to the rest of the survey.

## Production Notes

*Print of base map on pages 4 and 5 courtesy of Anne Arundel County Office of Planning and Zoning.*

*Photographs on pages 2, 3, 23, 24, 27, 30, 33, and 37 (top) supplied by National Park Service*

*All other photographs supplied by Charles W. Cadle, Jr. Program Open Space, Maryland Department of Natural Resources*

*Graphics and layout by Josephine B. Thoms, Scenic and Wild Rivers Program, Land Planning Services Maryland Department of Natural Resources.*

*For more information about the  
study or river conservation contact:*

U.S. DEPARTMENT OF THE INTERIOR  
National Park Service  
Mid-Atlantic Region  
143 South Third Street  
Philadelphia, PA 19106  
(215) 597-7386

MARYLAND DEPARTMENT OF NATURAL RESOURCES  
Land Planning Services  
Wild and Scenic Rivers Program  
Tawes State Office Building, C-3  
Annapolis, MD 21401  
(301) 269-3656

WEEMS CREEK CONSERVANCY  
6 Weems Creek Drive  
Annapolis, MD 21401  
(301) 266-8368

DEPARTMENT OF NATURAL RESOURCES  
INFORMATION RESOURCE CENTER  
NON-CIRCULATING