



DEER CREEK Scenic River

REVISED EDITION - 1979

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DEPARTMENT OF NATURAL RESOURCES
INFORMATION RESOURCE CENTER
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DEER CREEK Scenic River

REVISED EDITION

Harford County, Maryland, 1979

A Guide to the Protection and Wise Use of Deer Creek

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Introduction



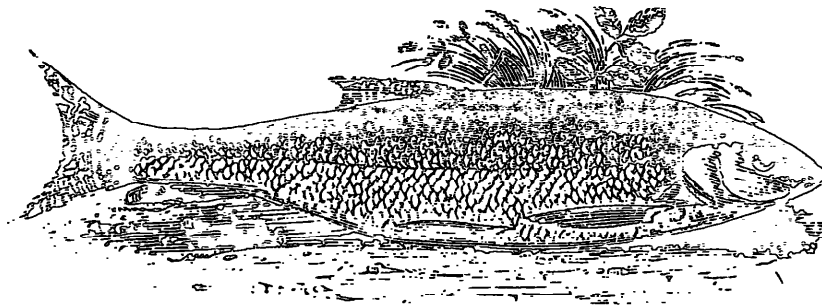
The *Maryland Wild and Scenic Rivers Act* was passed in 1968, in recognition of the need to protect rivers of outstanding value in the state. In 1972, the Scenic Rivers Program was created with the designation of five rivers. The Act directs the Secretary of the Department of Natural Resources to "provide for wise management . . . and preservation" of the land resources as well as the scenic, agricultural, and wild qualities of designated rivers.

In 1973 Deer Creek was designated a scenic river by the Maryland legislature. A local Advisory Board composed of landowners and residents in Harford County was appointed in 1975. The tasks of this Board are to review programs for Deer Creek formulated by the Department of Natural Resources and to make recommendations to the State and local governing body.

Working together, the Department of Natural Resources and the local Advisory Board prepared this guide in order to set forth plans for the protection and wise use of Deer Creek.

This guide is intended for use by everyone who is involved with Deer Creek in the course of their daily life, profession, or leisure time. It was developed with the understanding that the challenge of protecting a river is much like a campaign; it affects many people. In addition, it requires a clear understanding of the issues and a thorough knowledge of weapons at hand. Only then can effective plans be devised.

In the first two chapters of this guide, the special qualities of Deer Creek are described and its varied threats are identified. CHAPTER 2 also discusses conservation techniques and management recommendations to be used by private landowners, canoeists, and managers of public and private land. Plans for insuring the protection and future uses of Deer Creek are discussed in CHAPTER 3. These are intended for implementation by the Harford County government. The tactics recommended in *Appendix 1* are designed for owners of recreation facilities including the Maryland Park Service and Harford County Department of Parks and Recreation. In addition, *Appendix 2* lists the arsenal of regulations, financial and technical assistance programs, and other government aids to river protection.



Summary



The landscape of the valley surrounding Deer Creek is notable for its historic structures and, most importantly, for its large percentage of open, agricultural land. Deer Creek itself is a healthy trout stream. However, there are three ways in which the scenery and biological integrity of the stream and shorelines are threatened. 1) Sediment is a significant pollution threat to the stream. 2) Development pressure is creating demand on the valley as a place for residential neighborhoods. These demands threaten the continuation of farming as well as the beauty and character of the landscape. 3) Water-oriented recreation, because it is enjoyed

by growing numbers of people, is a threat to social harmony and to natural features of the stream and shorelines. In addition, it jeopardizes some rights of private property owners.

Recommendations for the protection and wise use of Deer Creek speak to many varied issues. Specific recommendations appear throughout the text of the guide. They range from conservation practices for landowners to a general consciousness-raising about respect for rivers and property. Also recommended are policies to be adopted by the Harford County government to insure the future well-being of Deer Creek.

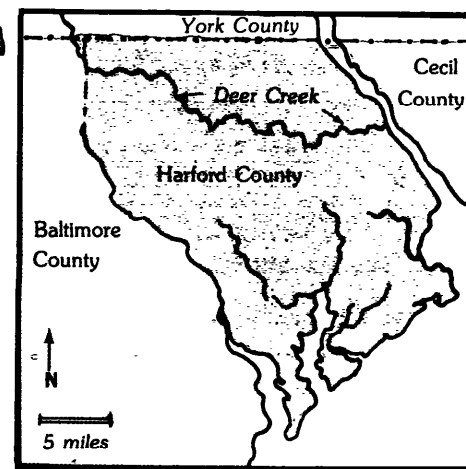
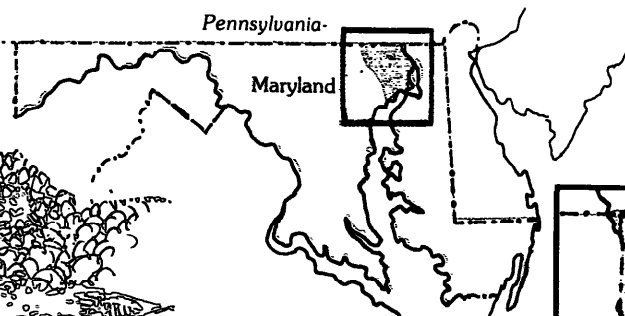


CHAPTER 1 *The River in Perspective*



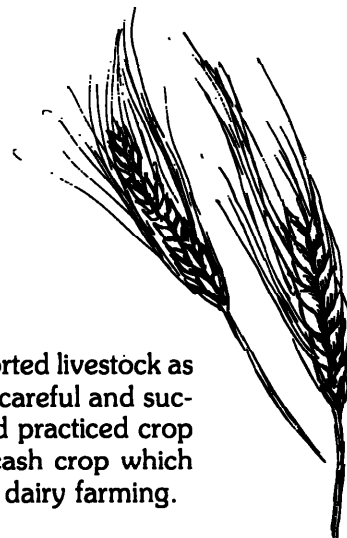
From its headwaters in southeastern Pennsylvania, Deer Creek flows east across northern Maryland to its mouth on the Susquehanna River. It is one of many small, swift streams to cut valleys and drain the hillside of the area known as the Piedmont Plateau.

In precolonial days, Deer Creek flowed through uninhabited wilderness. Bear, elk, deer, and other creatures were abundant in the dense hardwood forests. The Susquehannocks, a tribe of Iroquois Indians who used this area as a hunting and fishing grounds, gave Deer Creek its name.

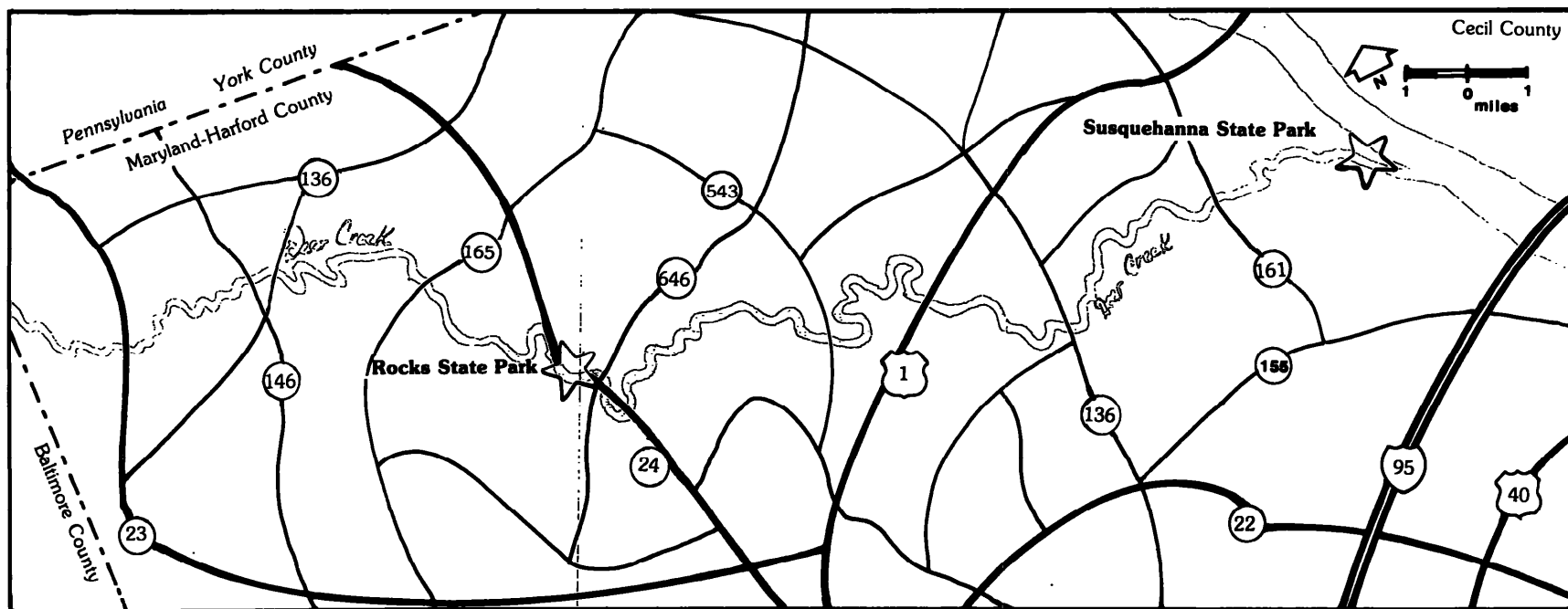


Explorers accompanying Captain John Smith up the Susquehanna River first discovered Deer Creek in 1608, but because of the danger of fierce Indian warfare and the difficulties of travel by land, the Piedmont remained a remote wilderness for many years. It was not until after 1700 that permanent settlements developed.

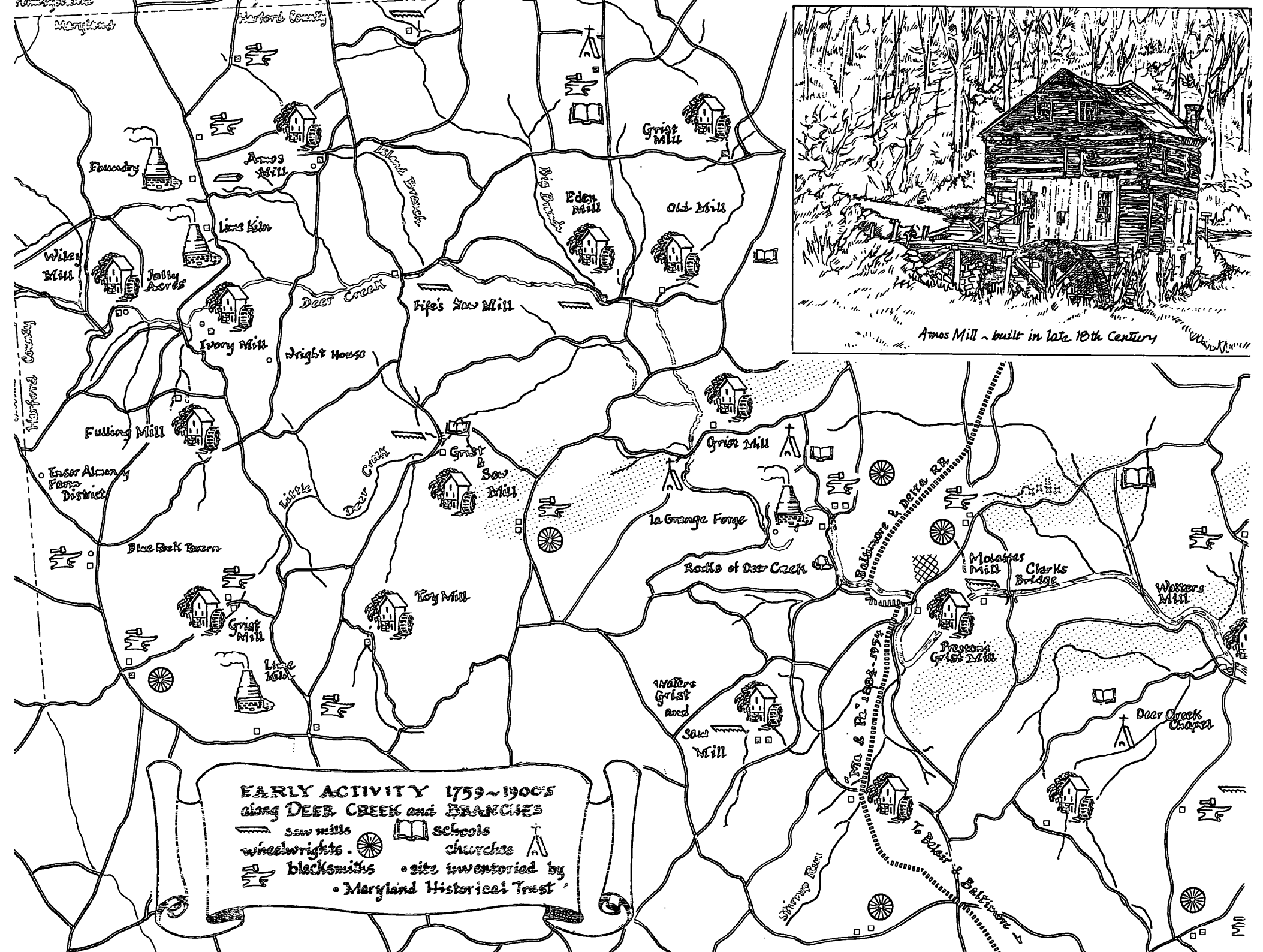
Farming was the impetus for settlement along Deer Creek and its tributaries. Both colonists migrating north from Baltimore and German settlers from Pennsylvania were attracted to the fertile Piedmont, where wheat and other grains



thrived in the valleys, and the hillsides supported livestock as well as tobacco. The settlers were generally careful and successful farmers who fertilized their fields and practiced crop rotation; gradually tobacco, an important cash crop which severely depleted the soil, was replaced by dairy farming.



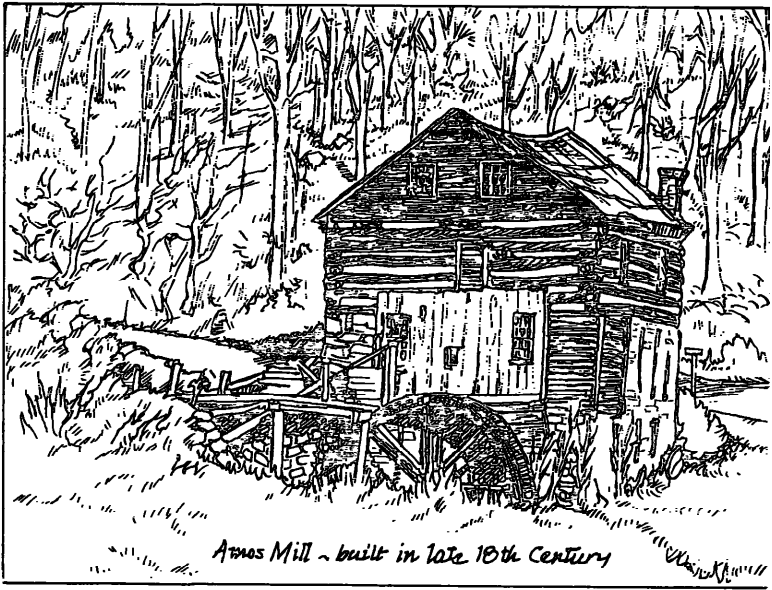
Local Roads and Highways in the Deer Creek Area



EARLY ACTIVITY 1759-1900's

along DEER CREEK and BRANCHES

-  saw mills
-  wheelwrights
-  blacksmiths
-  schools
-  churches
-  churches
-  sites inventoried by Maryland Historical Trust



Amos Mill - built in late 18th Century

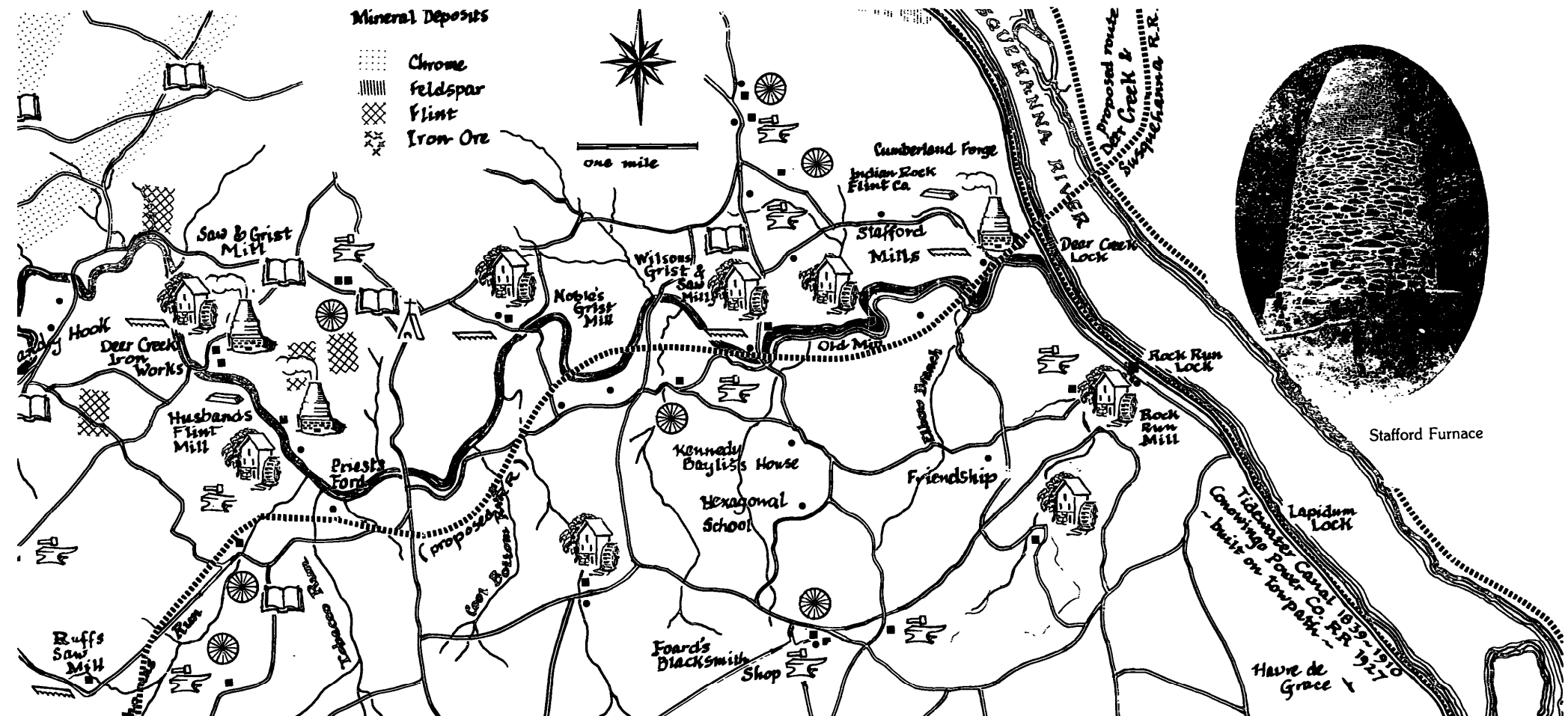


Mills sprang up throughout the valleys, as local industry developed along with agriculture. Grist mills and saw mills, producing flour and lumber, were among the first buildings constructed in every settlement. Most basic necessities such as shoes, textiles, nails and earthenware were soon manufactured from local farm products, iron ore, animal hides and other native resources. In small commercial centers, clusters of mills encircled a dam and mill pond on a fast-flowing stream which supplied the water-power as well as serving as an outlet for industrial waste products.

The first local roads frequently paralleled a stream, linking

mills and improving the transport of raw materials and manufactured goods. After 1750, as trade and travel increased in the Deer Creek watershed, picturesque covered bridges were a common feature of the landscape.

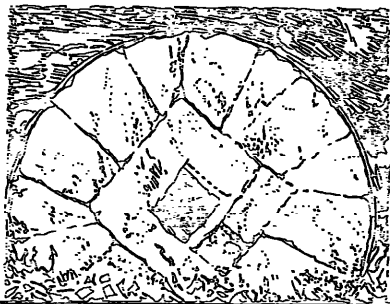
Although major industrial or commercial centers never developed along Deer Creek, the rural farms and mills responded to the growing demands of the nearby trade centers, Baltimore and Philadelphia, with a steady export of wheat, flour and lumber. On Deer Creek during the 19th Century, the iron furnaces and flint industry were spurred on by the demands of the Civil War and railroad construction.





Rapid nationwide industrialization in the 1900's, sparked by the advent of steampower, the spread of the railroad and westward migration, brought almost no change to the Deer Creek valley. Outdated water-powered mills gradually declined, and farming continued to spread through the valley. Although entrepreneurs had laid out the route for a railroad to carry passengers and freight from Bel Air to the Susquehanna River, the Deer Creek and Susquehanna Railroad was never completed. Sections of the abandoned bed are still detectable along the north bank of Deer Creek.

Today the Deer Creek valley remains apart from the great transportation corridors connecting the metropolitan cities and ports of the east coast, and no incorporated or unincorporated towns exist along the creek. The landscape of Deer Creek, characterized by pastures, scattered farms and mill artifacts, retains much of the historical evidence of a longstanding way of life. Mature woodlots and fertile lands-resources which attracted the early settlers, are still in existence, and farming — the traditional land use, is still actively pursued. However, where settlers once judged the stream by its yield of power, people now treat it as a scenic and recreational feature of the landscape. Because change has occurred so slowly over the last 200 years, the simple beauty of Deer Creek has been preserved.



CHAPTER 2 Riverscapes: Description and Management



To recommend the best and most appropriate uses for the continued protection and enjoyment of a river, one must first understand the character of the river.

This chapter describes the character of Deer Creek by identifying and depicting *Riverscapes*,¹ which are scenes most commonly found along the Creek. For each *Riverscape*, the chapter recommends appropriate uses of the water and land resources and suggests the most workable methods of protecting or improving specific areas of the Creek.

The *Riverscapes* which characterize Deer Creek were derived by combining descriptions of the stream itself with descriptions of the cultural setting of the adjacent lands.

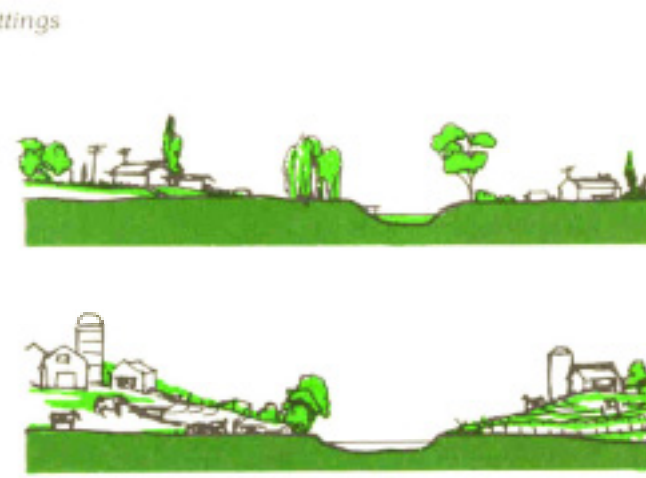
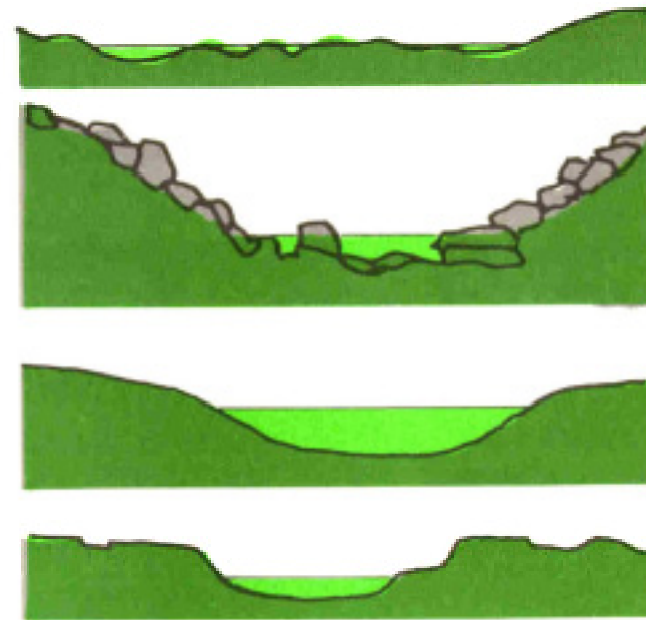
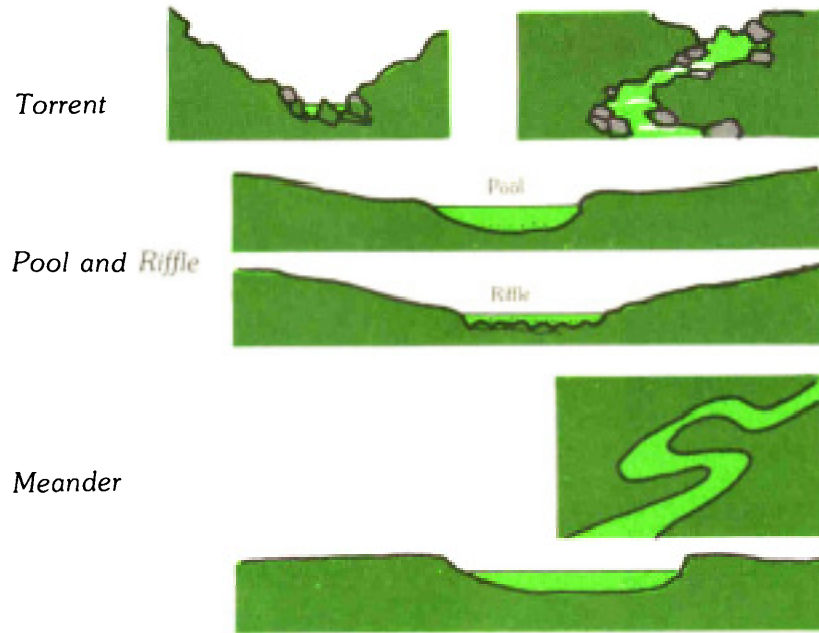
The three *basic stream environments* found in Deer Creek are briefly described at the beginning of this chapter. These are the *Torrent*,² the *Pool and Riffle*,³ and the *Meander*.⁴ Each has biological and physical characteristics which are distinctive and important to the overall quality of the stream.

In addition, several *natural and man-made features* related to the stream are focal points along Deer Creek. These are *Bogs*, *Gorges*, *Mill Ponds*, and *Tidewater*, which are discussed separately in this chapter.

Four different *cultural settings* characterize the landscape of the Deer Creek valley. These are the *Wooded*, *Rural*, *Agricultural* and *Suburban* settings. Each has its own distinctive type of land use and settlement pattern, and each affects the quality and character of Deer Creek.

basic stream environments

natural and man-made features



Bog

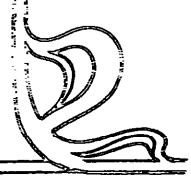
Gorge

Mill Pond

Tidewater

Suburban

Agricultural





New York Fern

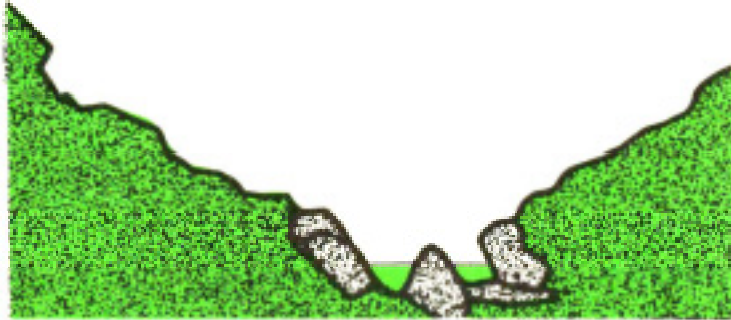
-Thelypteris novboracensis



Water Moss - *Fontinalis*



TORRENT



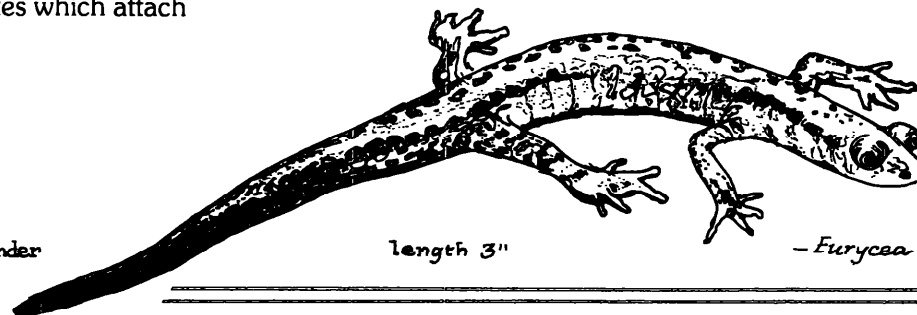
Torrent streams are usually associated with headwaters and upland mountain reaches. They flow through narrow valleys with steeply sloping banks. The bedload consists of large rocks and boulders. During periods of high flow the stream current is powerful and turbulent.

Some land animals dwell along the banks of torrent streams. The channel itself is a rigorous habitat, suitable only for organisms adapted to conditions in swiftly flowing water. Aquatic plant life is limited to such plants as filamentous algae which attaches itself to the bed material, and mosses covering rock outcrops. The fauna are primarily invertebrates which attach

to the undersides of boulders and rubble and feed on floating matter and algae. Despite the rugged conditions, some spots in torrent streams make suitable spawning places for trout. Brown and brook trout are attracted to the cold, aerated water and gravelly streambeds, which make safe nests for their eggs.

As well as being an ecological asset, the torrent stream is a visual delight. The sound of rushing water and sight of swirling currents make the torrent stream a unique environment that should be enjoyed but not disturbed.

Two-lined Salamander

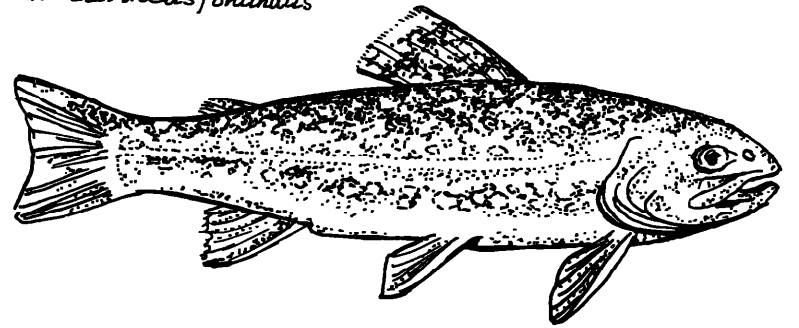


length 3"

- *Eurycea bislineata*



Brook Trout - *salvelinus fontinalis*



Belted Kingfisher

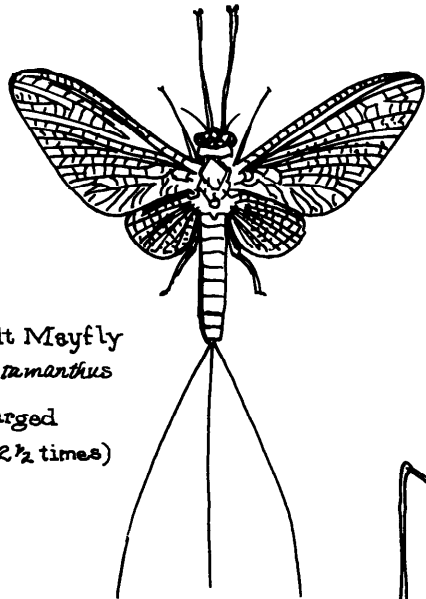
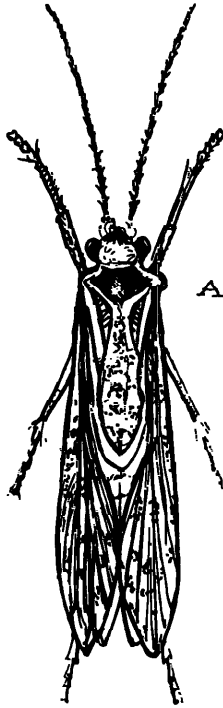
length 15 1/2"



Megasceryle alcyon

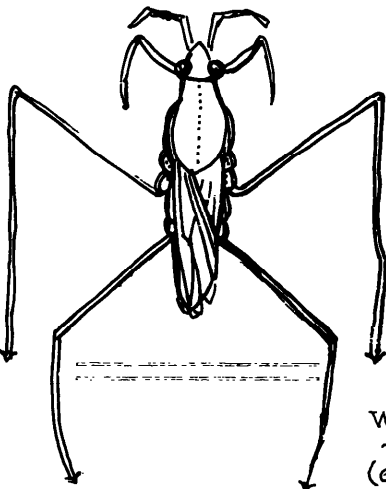
Adult Caddis Fly - *Rhyacophila fenestra*

(enlarged 4 1/2 times)



Adult Mayfly
- *Potamanthus*

(enlarged
2 1/2 times)



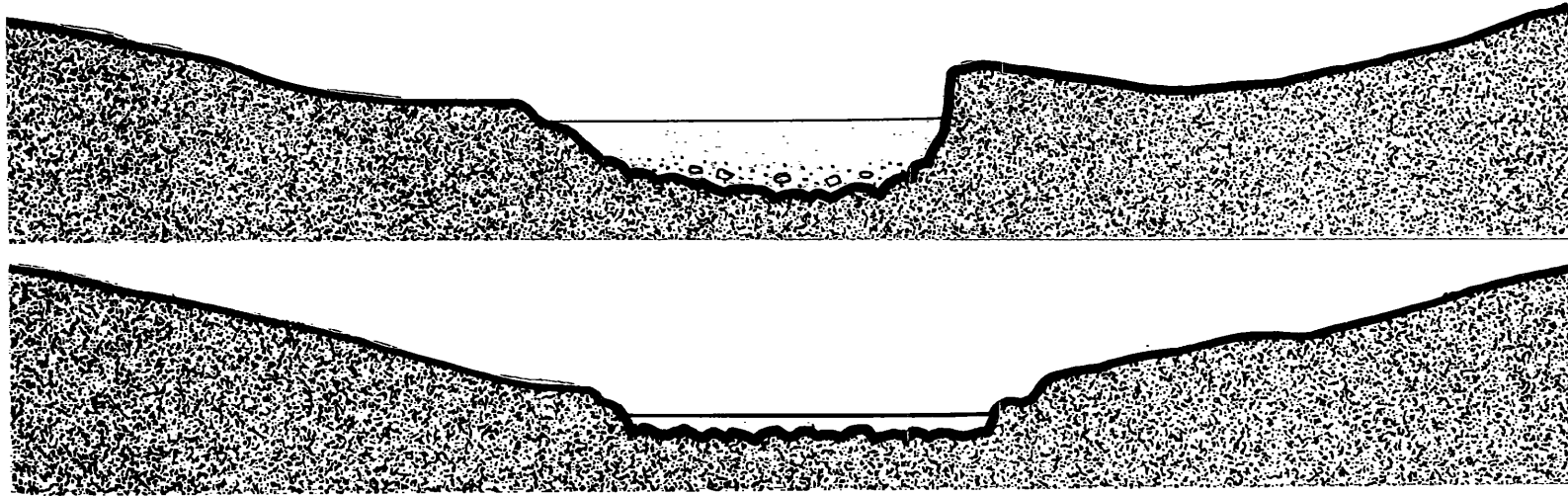
Water Strider -

- *Geris*

(enlarged 3 times)



POOL & RIFFLE



Pool and riffle streams typically flow through foothills or land with a gentle slope. These streams have fast “riffly” stretches flowing over shallow rocky beds, interspersed with pools in which the current is slowed. Where a pool interrupts the course, the streambed usually contains deposits of sand, organic detritus, and lighter sediments. The stream bank is generally wooded and considerably higher than the stream channel. Streamflow is affected by seasonal variation, flowing torrentially in spring and trickling during summer.

Because of their variety of physical characteristics, pool and riffle streams support a great variety of stream life. Organisms are attuned to constant downstream movement, and in some cases the seasonal rise and fall of water corresponds

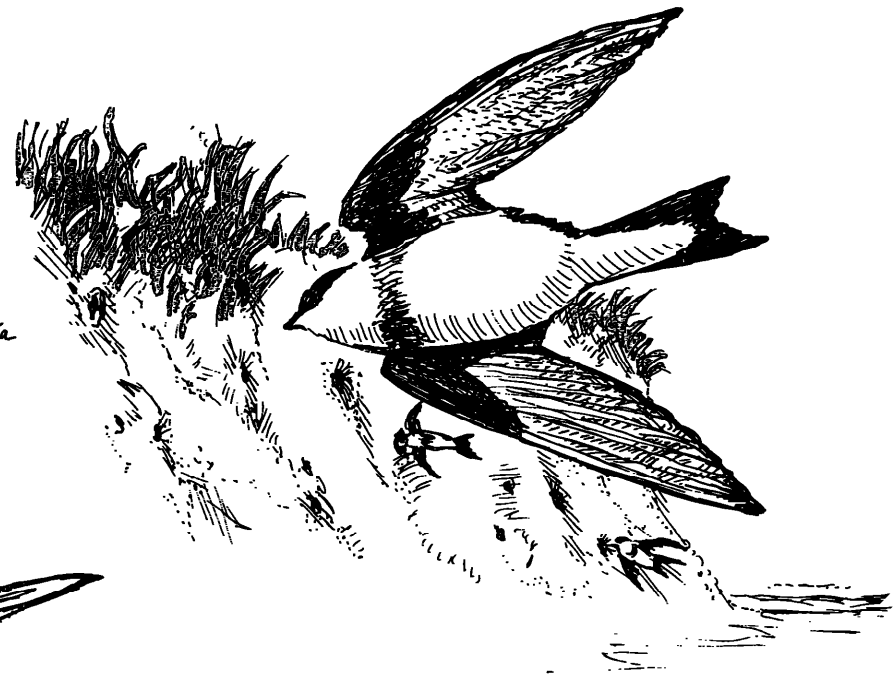
to breeding cycles. The flora and fauna of riffle areas resemble those organisms of the torrent streams, such as insect larvae, which attach themselves to rocks. Pools which are well-shaded by an overhanging forest canopy, high in dissolved oxygen, and provided with ample cover are ideal trout habitats. In addition, these pools support minnows and bottom-feeders and contain rooted aquatic plants.

Very small pool and riffle tributaries are valuable spawning habitats which contribute significantly to the fish population of large streams. A great variety of mammals and amphibians also use the stream and dwell along the forested banks. The high productivity, numerous habitats, and clear water in pool and riffle streams make them a unique natural resource.

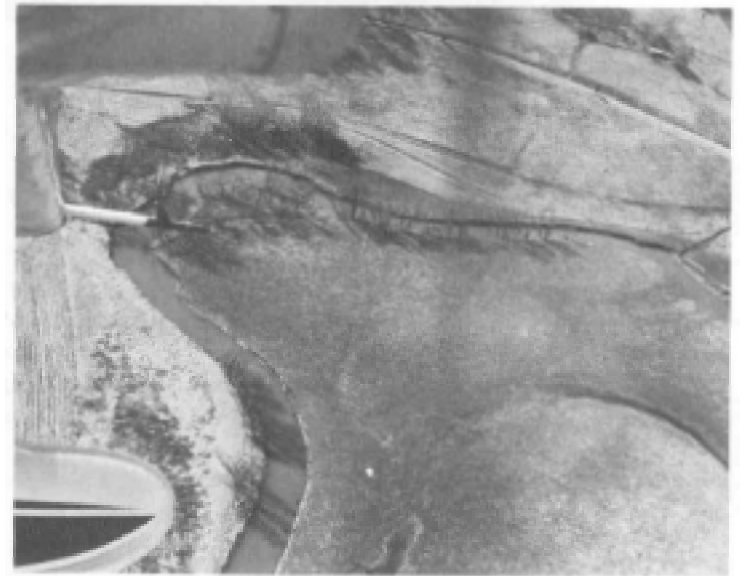
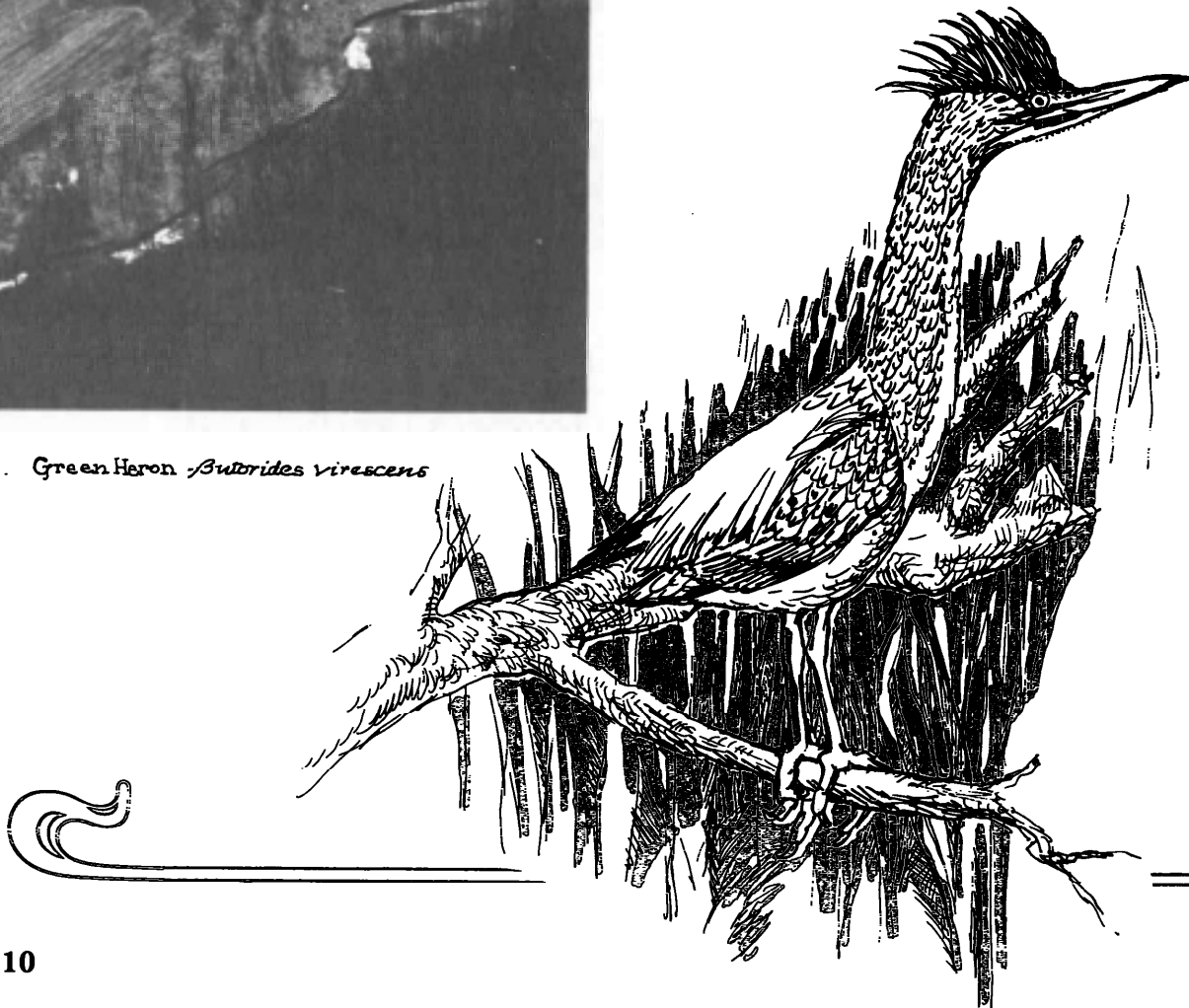




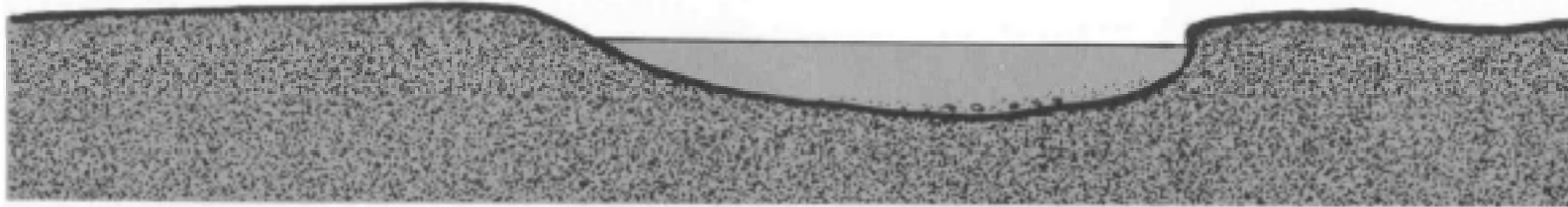
Bank Swallow - *Riparia*



Green Heron - *Butorides virescens*



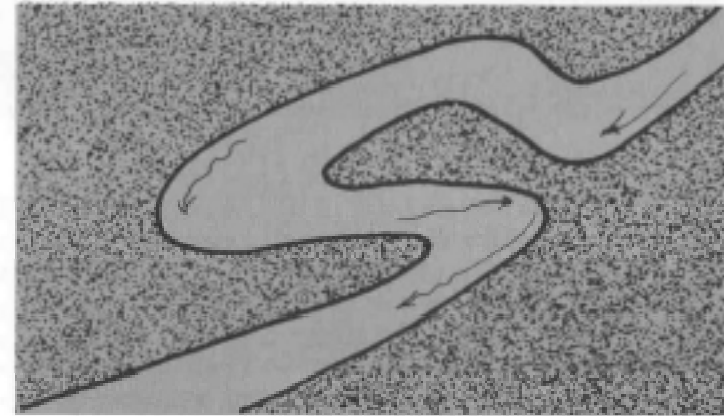
MEANDER



A broad valley is the typical location of meandering rivers. Because these streams wind through flat lands, the edges are often poorly defined, and marshes and swamps border the shore. The stream channel is wide and the current sluggish or almost imperceptible, giving the meandering stream qualities similar to ponds or lakes. Water sometimes appears to move in the direction of the prevailing winds. The stream bed is typically composed of loose muds, silt, and organic detritus, and the water is generally turbid.

Meandering streams support a relatively small number and diversity of organisms because of poor light penetration and the nature of the bed material. Fragile flora and fauna would be smothered by silt deposits. Some species of plankton do exist in the still waters of rivers, and mudgrubbing species of fish also inhabit meandering reaches. Invertebrate populations vary with the nature of the stream bed.

Richest in habitats are the backwaters and shorelines of meandering streams. These areas act as water reservoirs and supply the open channel with nutrients. In addition, many birds, rodents, turtles, and other creatures feed and seek protection in the wetland vegetation of the backwaters.



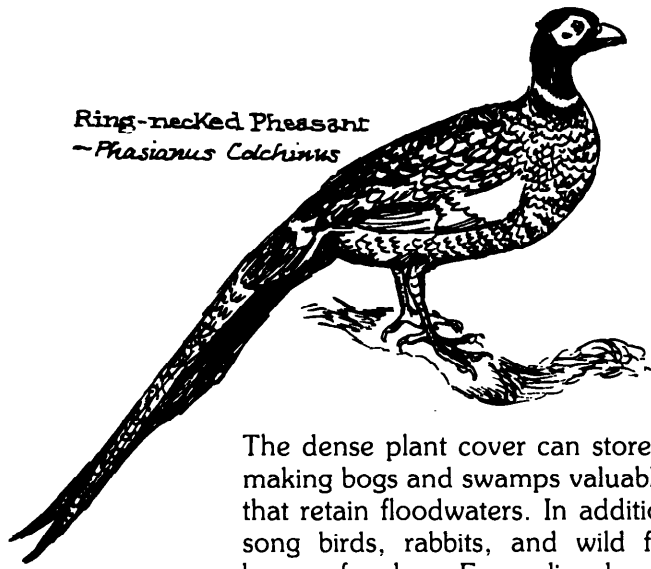
BOG



Bogs are pockets of wet, spongy land which support a shrubby thicket of water-tolerant vegetation and attract a varied assortment of wildlife. Although bogs are characterized by the presence of brown, acidic water and sphagnum moss underlain by peat deposits, there are no hard and fast distinctions between bogs, marshes, and swamps. All are wetlands produced in moist, low-lying areas with no definite basin or channel. These inland wetlands include areas ranging from small depressions in a pasture or seepage collecting in an upland plateau to abandoned beaver ponds and the backswamps of a river. Because they are shallow and open and always retain some water, they can develop a considerable density of vegetation. Cotton grass and rushes are interspersed with sphagnum moss in the soggy spots, while on firmer land along the bog margins, blueberries, alder, and red maple are among the shrubs and small trees which contribute to the bushy, green texture of a bog.



Ring-necked Pheasant
- *Phasianus Colchicus*



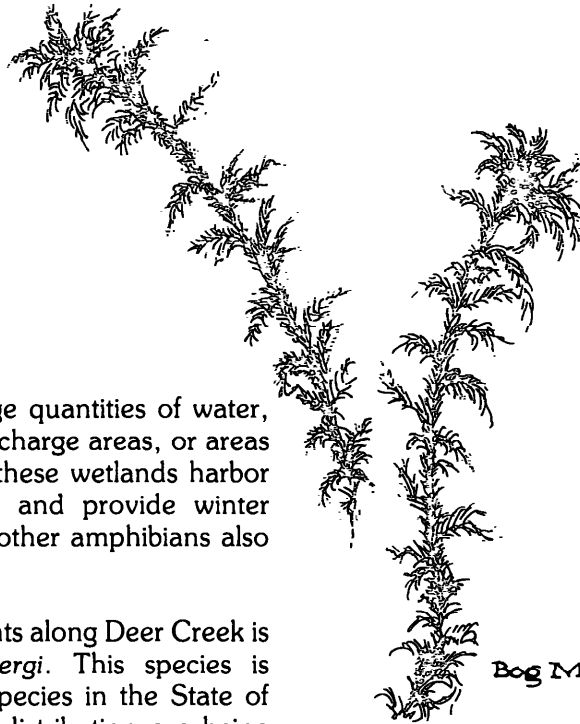
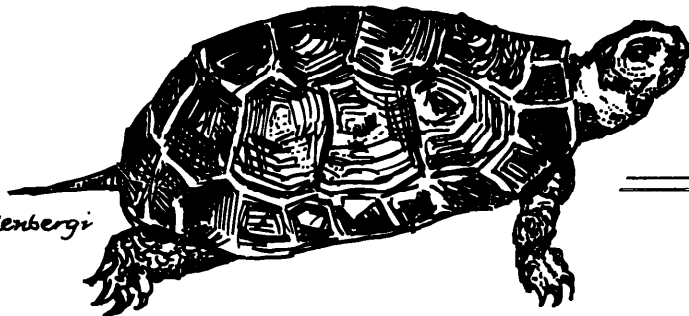
The dense plant cover can store large quantities of water, making bogs and swamps valuable recharge areas, or areas that retain floodwaters. In addition, these wetlands harbor song birds, rabbits, and wild fowl, and provide winter browse for deer. Frogs, lizards, and other amphibians also reside in the wettest spots.

Most notable among the bog inhabitants along Deer Creek is the bog turtle, *Clemmys muhlenbergi*. This species is presently listed as an Endangered Species in the State of Maryland. Studies of its population distribution are being carried out by the Wildlife Administration of the Department of Natural Resources. Though more common than previously believed, bog turtle populations are still quite vulnerable to habitat destruction.

Because bogs and wetlands are unfit for construction or cultivation, they are frequently drained or excavated and turned into farm ponds. Although bogs are regarded as a nuisance by many landowners, they should be preserved because they are important habitats and they contribute to the improvement of the downstream environment.

Bog Turtle

- *Clemmys muhlenbergi*



Bog Moss
Sphagnum



Leopard Frog. *Rana pipiens*

MANAGEMENT RECOMMENDATIONS FOR BOGS

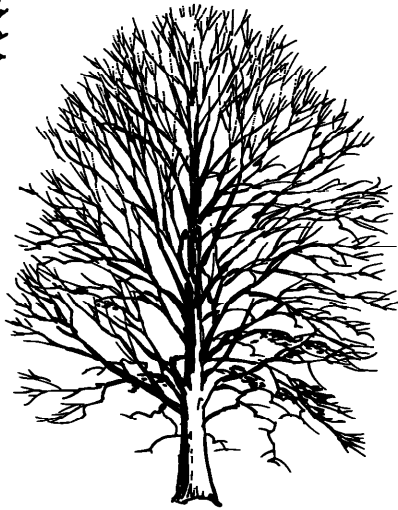
- * *Preserve in its natural condition as a wildlife sanctuary.*
- * *Recreation: bird-watching, botanizing.*
- * *The County should develop an inland wetlands protection plan.*



leaves 2-6" long



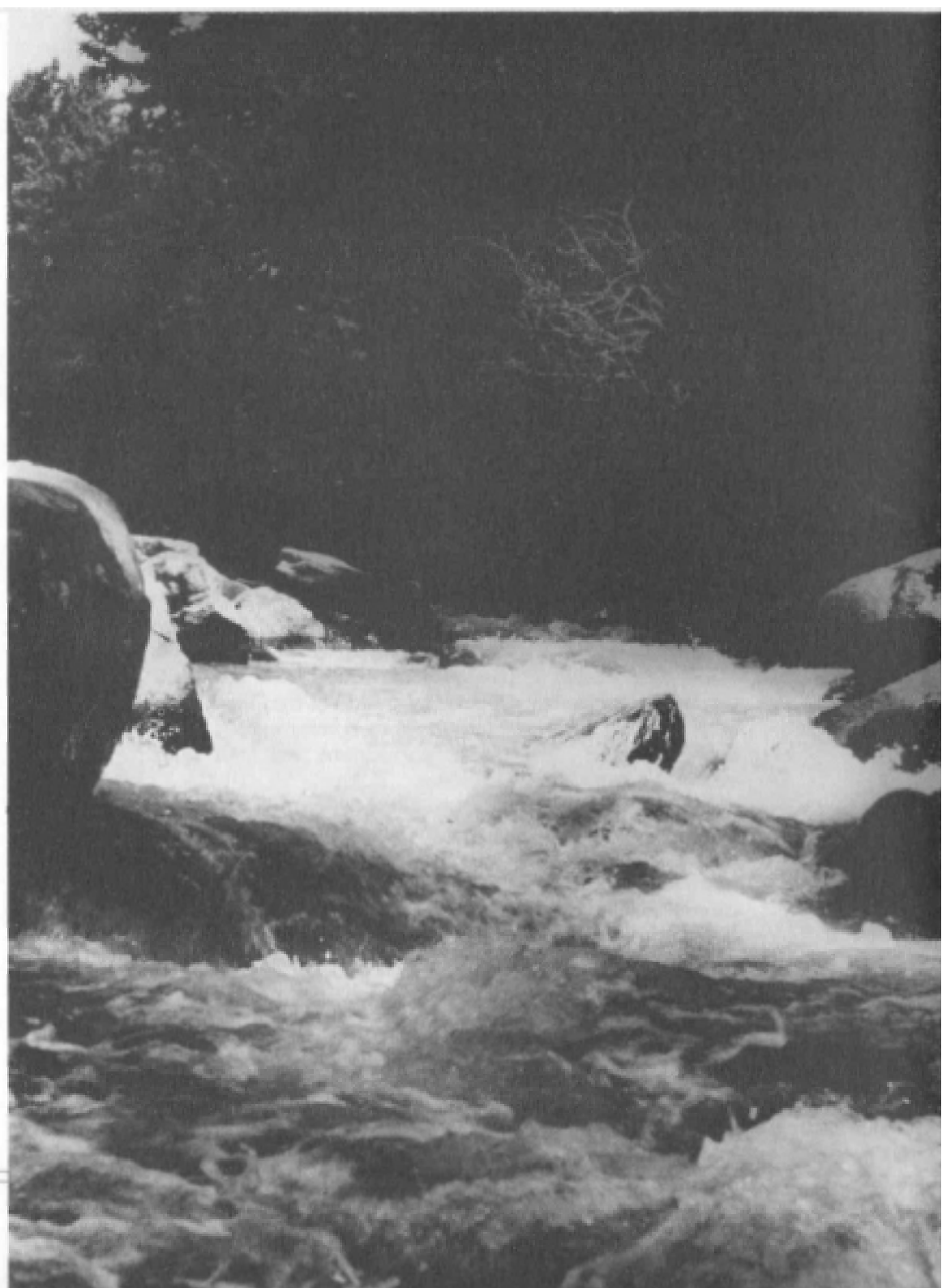
Beech *Fagus grandifolia*



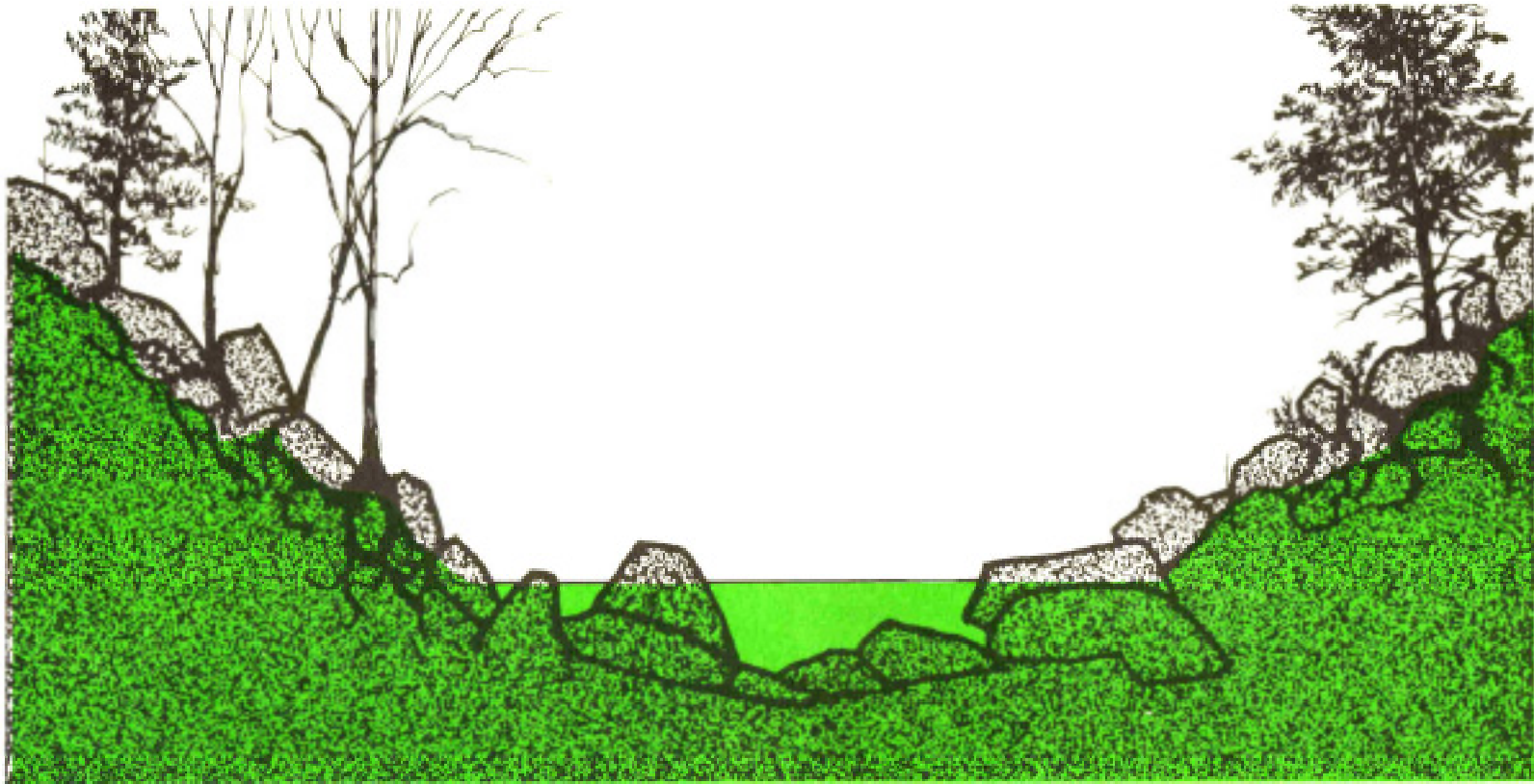
Chipmunk
Track
hind actual size



Eastern Chipmunk
Tamias striatus



GORGE



A *gorge* is characterized by steep banks and streamwalls cut through rugged, rocky terrain. Gorges are likely to be found where there is a rapid descent in elevation, granitic rock outcrop-

ping, and an associated swift, gushing waterway. The ruggedness of the landscape and the whitewater that characterizes the gorge makes it one of the most spectacular sections of a river.

On Deer Creek, both the narrow valley of the Palmer property east of the Forge Hill Road crossing and the tall cliffs at Rocks State Park are gorges. Legend has it that the cliffs overlooking Deer Creek were once a ceremonial Indian site. By the mid 1800's many of the cliffs had been mined for chrome and pig iron. These areas have subsequently become state park lands. A feeling of remoteness is created by the enclosed, dramatic quality of the narrow, wooded stream valley and should be preserved.

Large granite boulders and unusual rock formations are found in the gorges. The vegetation is adapted to organically poor topsoils and includes such common species as hemlock, pines, oaks, and laurel. Mosses and ferns grow on moist rocky banks, while rock crevasses and exposed roots provide habitats for ground squirrels, lizards, and snakes. The thin woods established on rocky streambanks is a fragile environment-sensitive to human disturbance as well as fire and wind damage.

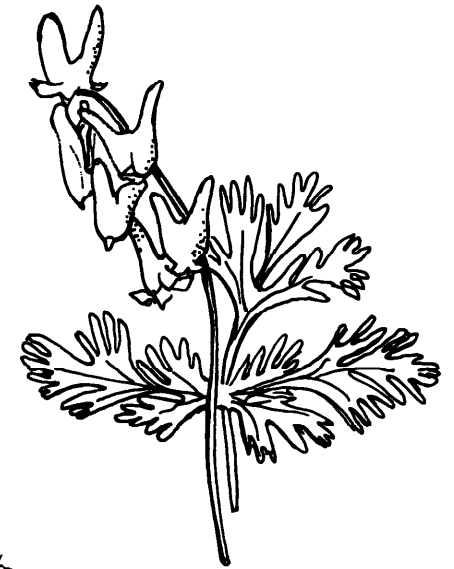
Opportunities for photography, picnicking, and the enjoyment of scenic overlooks are all excellent. Because of the forceful and unpredictable nature of the water in the gorge channel at Rocks State Park, use of the stream at this point should be strictly prohibited. Ample warning should be posted and a portage site should be provided for canoeists. Additional recommendations for the management of the state-owned Palmer property and Rocks are listed in Appendix 1.



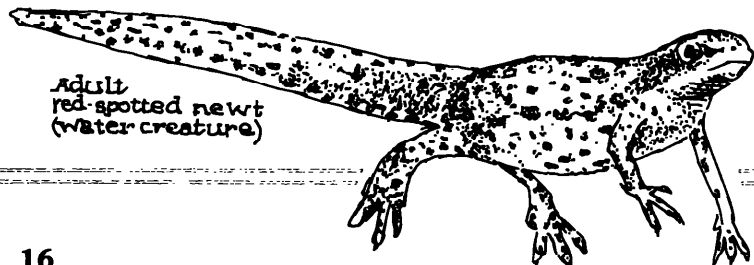
Eastern Hemlock
Tsuga canadensis



60-75
feet



Dutchman's-Breeches
Dicentra cucullaria
5'-9" tall
yellow-tipped flowers

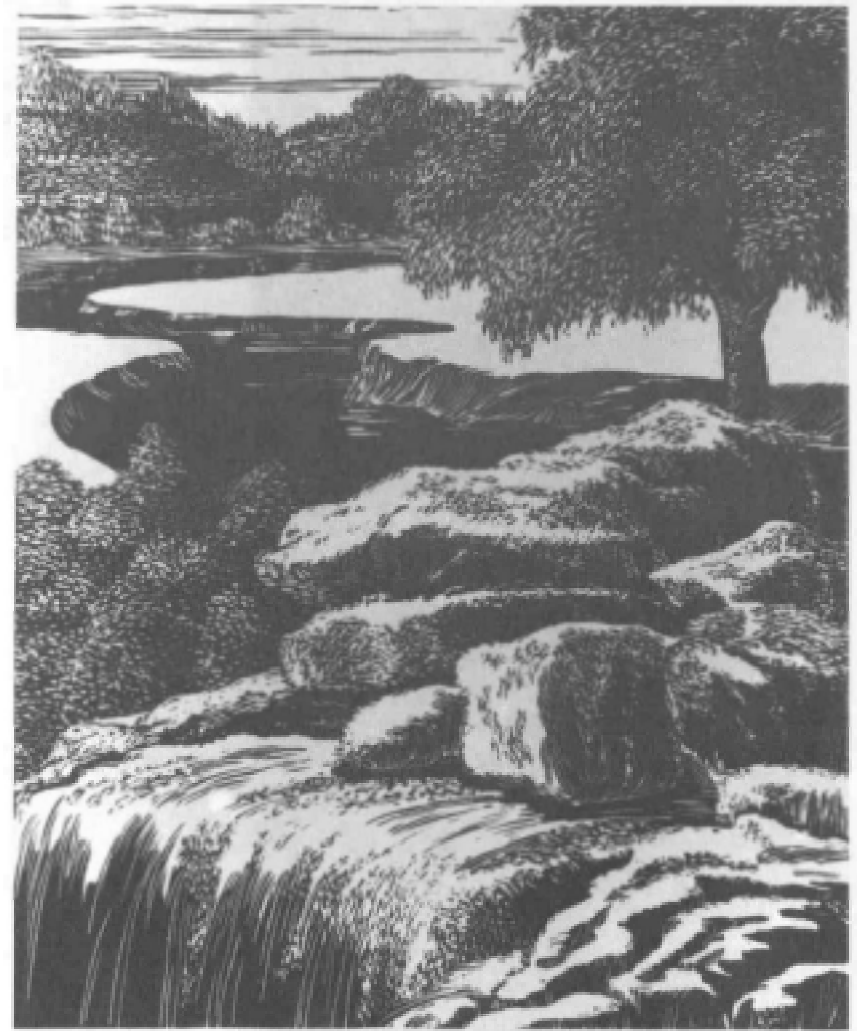


Adult
red-spotted newt
(water creature)





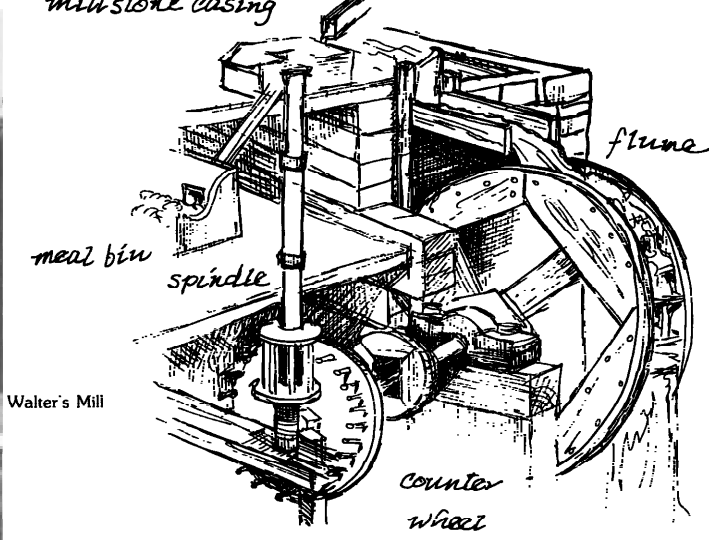
Woodcut: artist unknown. Reprinted by permission
MARYLAND HISTORICAL SOCIETY, BALTIMORE



MANAGEMENT RECOMMENDATIONS FOR GORGES

- * *Preserve the natural rugged character of the gorge.*
- * *Relocate parking and prohibit parking along gorge.*
- * *Improve road safety.*
- * *Recreation: This is a dangerous area: increase supervision of river front.*

Rocks of Deer Creek, HARFORD COUNTY, MARYLAND



Walter's Mill

GRIST Mill Detail



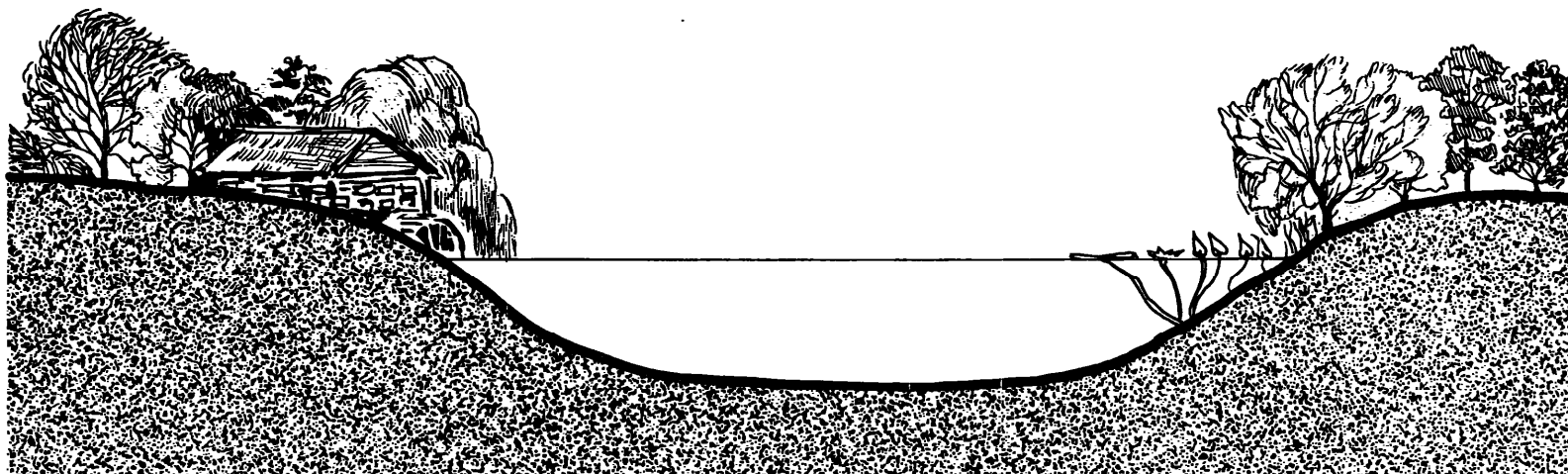
Ivory Mill



Stoke's (Wilson) Mill



Eden Mill! c. 1900
(Courtesy Mrs. Harry Z. Heaps, Forest Hills)



Mill ponds are areas of slack water and widened stream channels formed wherever streams were dammed to supply water power to local mills. Commonly found along pool and riffle streams, mill ponds are attractive and have special historic significance since they mark the sites of early industrial activity.

On the main stem of Deer Creek, mill ponds can be found upstream of the dams at Eden Mill, Noble's Mill, and Wilson's Mill. In each case, farm buildings or a mill house associated with the mill pond can be seen on the shore. These are massive, functional structures built over 100 years ago. Amos Mill, Ivory Mill, Rock Run Mill in the Susquehanna State Park, and many other old stone and log structures

from the headwaters to the mouth of Deer Creek have captured the interest of tourists, artists, and mill historians. It is still possible to follow an abandoned mill race — the channel used to divert water from the creek to a waterwheel, or to discover remnants of shallow stone dams and heavy grinding stones discarded in the stream channel.

Though no longer put to their original industrial use, the dams, mill ponds, and associated buildings enhance Deer Creek in various ways. Wilson Mill is one example of an historic mill house which has been adapted for use as a private residence. Restoration or renovation of the many old buildings which are still standing would help preserve the aura of tradition which characterizes Deer Creek.

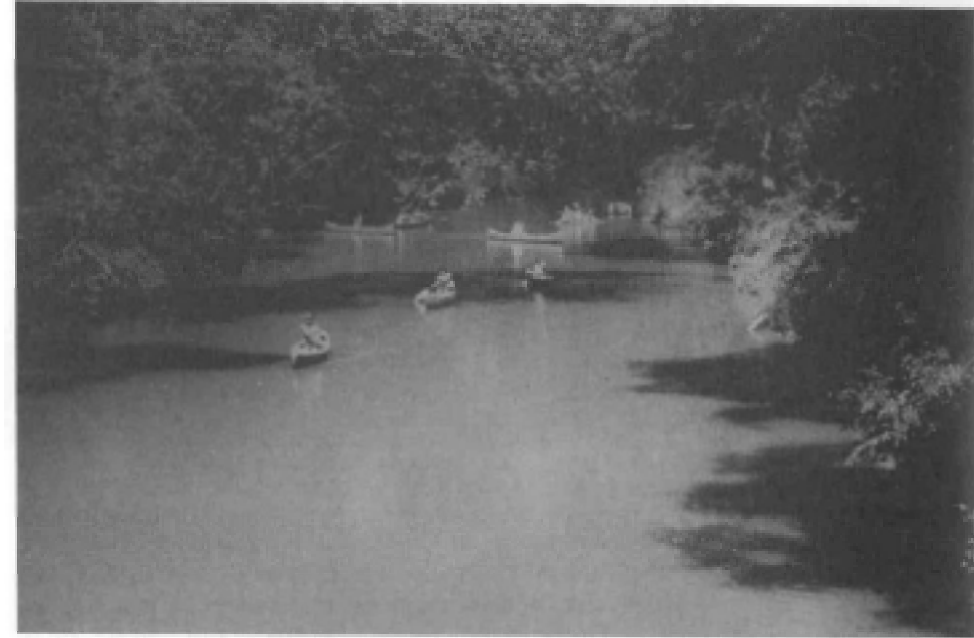
The calm water in a mill pond can extend upstream for an area of several miles, combining features of the pool and riffle stream environment with those of still water. Although mill ponds reduce the number of current-dependent organisms and the oxygen content in a stream, they do have biological value. Small- and large-mouth bass, various species of sunfish, and other bottomfeeders inhabit mill ponds of Deer Creek. Plankton and other aquatic plants which take root in mill ponds help support populations of dabbling ducks. In addition, mill ponds provide flood protection. They act as miniature reservoirs, temper the high velocity of floodwaters, and also allow some of the sediment washed in with storm runoff to settle.

As in most natural ponds and lakes, the water temperature and turbidity in mill ponds is higher than in the running stream. Although the constant flow of water through a mill pond and over the dam naturally flushes the pond and helps prevent stagnation from an excess accumulation of sediment, leaf litter, and algae, it is important to maintain these ponds. Along the stream bank willows, elders, and other alluvial trees and shrubs should be allowed to grow in order to keep the water shaded and prevent streambank erosion and any added turbidity caused by waves or winds.

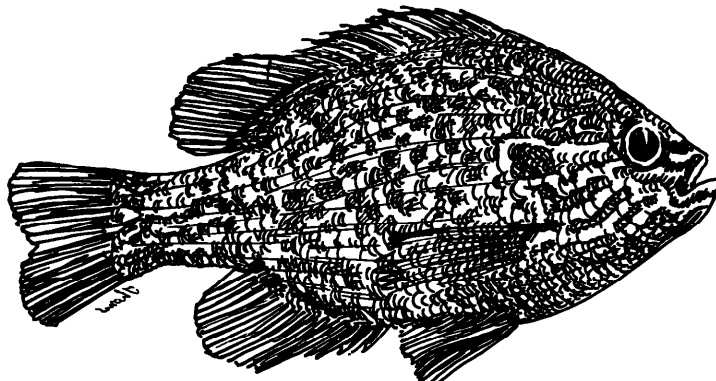
Because of the pooling of water in mill ponds, fishing and canoeing are popular activities despite seasonally fluctuating water levels on the rest of the creek. Since most of the mill ponds on Deer Creek are on privately owned land, recreationalists must respect the rights and privacy of the landowners. Dams are a hazardous obstacle for canoeists, and canoeists are well-advised to check a map for public roadside take-out points, unless they have obtained permission from the landowner to portage at a designated area.



Black Willow *Salix nigra*



Problems of illegal trespass by canoe portagers and bank fishermen may be solved by arranging easements between the landowners and the County or State. Although specific terms of easements vary, they are essentially contracts in which a landowner offers the government public access to a strip of land for a designated use. In return, the grantor of the easement may receive a tax advantage or payment of a percentage of the property value. Easements can be negotiated to include government responsibility for maintaining the strip of land.



The Common Sunfish

Lepomis gibbosus

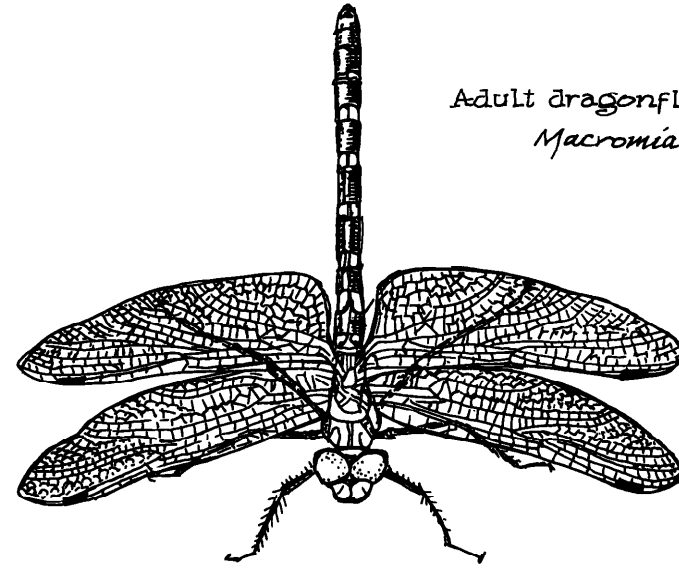
Eden Mill is a 57-acre Harford County Park on Deer Creek where the public has access to the stream, mill pond and shoreline for recreation. The park has facilities for ice-skating, skiing and sledding, canoeing, and picnicking, in addition to a parking lot for 153 vehicles and offices in an old grist mill.⁵

Vandalism, littering, and large gatherings in the parking lot are occasional misuses of the park.

Better management and more staff for supervision and development of an educational program are needed to help the County realize the potential of the scenic and historic charm of this area.



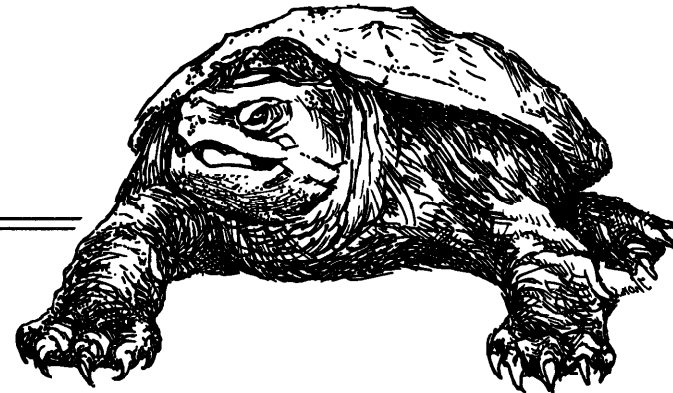
Adult dragonfly
Macromia magnificia

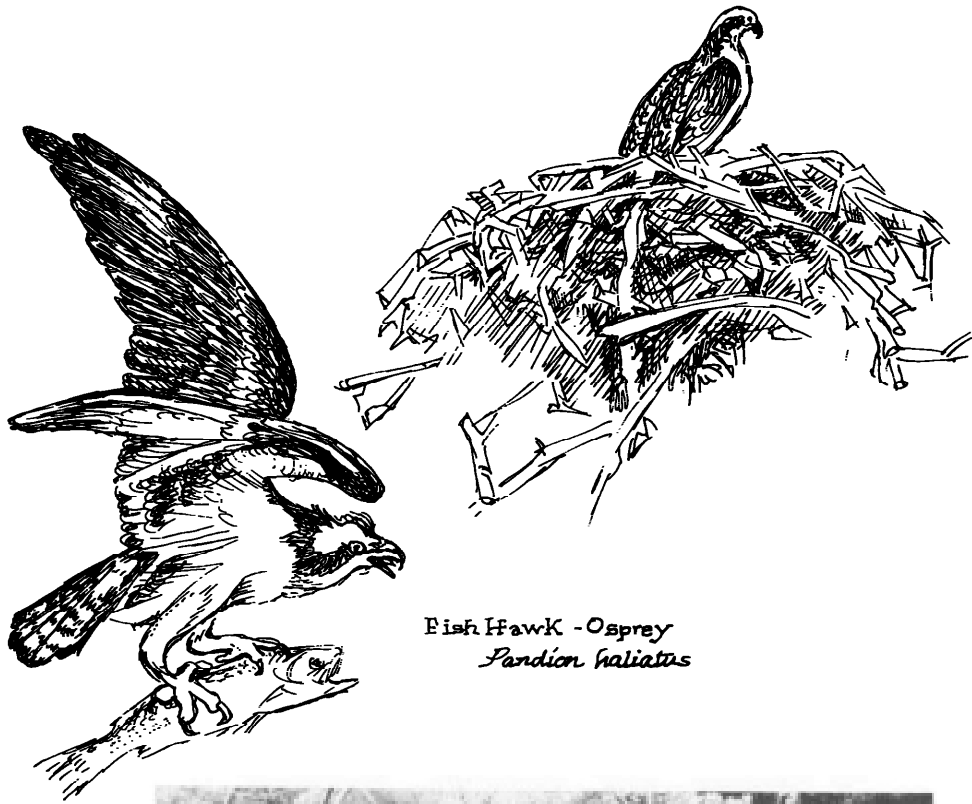


MANAGEMENT RECOMMENDATIONS FOR MILL PONDS

- * Restore and maintain historical structures.
- * Acquire easements for public access and canoe portaging.
- * Maintain stable water level in mill ponds.
- * Recreation: swimming, ice-skating, flatwater fishing, archeology and sketching.

Snapping Turtle
Chelydra serpentina

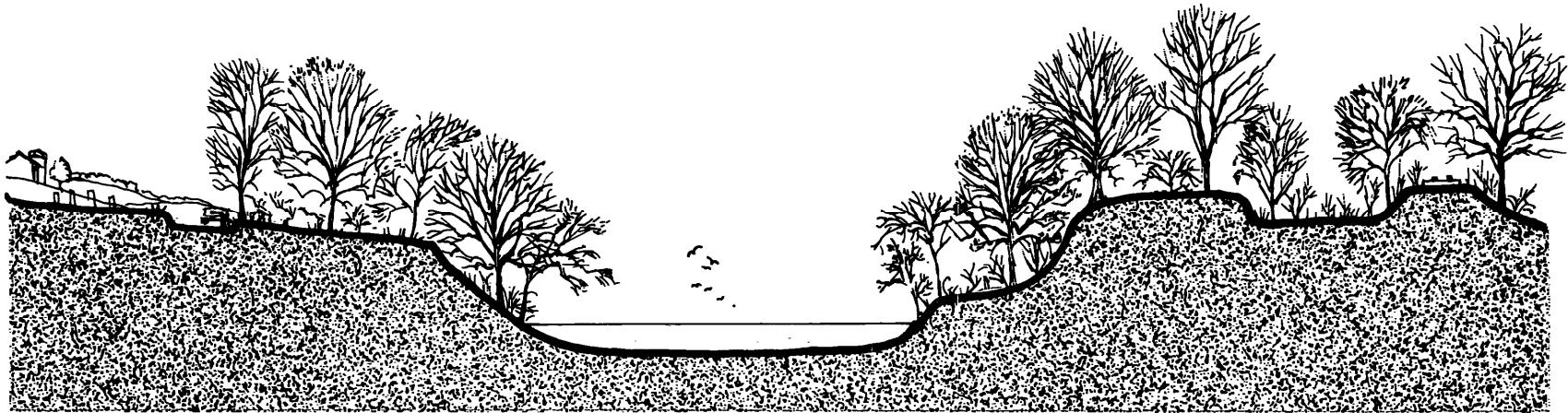




Fish Hawk - Osprey
Pandion haliaetus



TIDEWATER



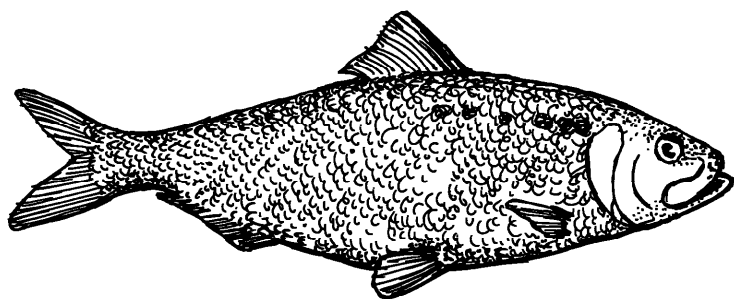
Tidewaters are found along the periphery of the coast, wherever the mouth of a river has been invaded by the sea. They range in appearance from flat shallow inlets to large cavities disrupting the contour of the coast. The blending of freshwater and sea environments characterizes the tidewater stream and makes it a distinctive feature of Maryland waterways.

In tidewaters stream currents combined with tidal fluctuations create a circulatory streamflow. The water is murky from nutrients and fine sediments suspended in the circulating currents. Coarse sediments carried by forceful currents are deposited on the bottom of the channel while sand, silt, and fine muds are washed onto the high-tide shoreline. Plankton, insects, migratory fish, and waterfowl are among the seasonal inhabitants of tidewaters.

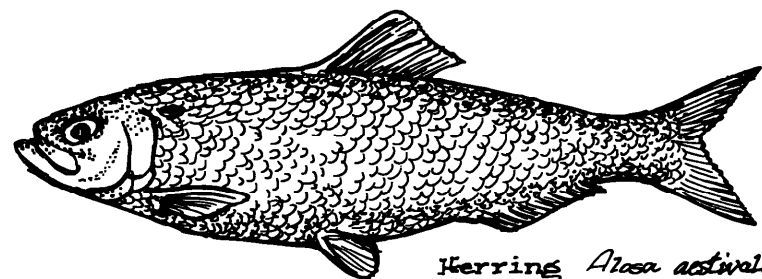




No salt water reaches Deer Creek, and by legal definition the limit of the tide is the mouth of Deer Creek at the Susquehanna River. Unique fish habitats, and the stream's former role in local industry are noteworthy qualities of this small stretch of Deer Creek.



American Shad *Alosa Sapidissima*



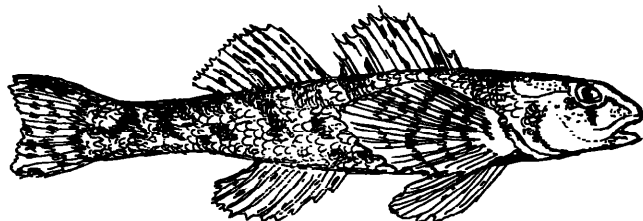
Herring *Alosa aestivalis*

During the spring, shad and herring migrate to tidal fresh-water spawning areas. The presence of a small fish ladder as far upstream as the Wilson Mill Dam indicates the extreme distance once covered by migratory fish in Deer Creek. Because the tidewaters play a vital role in the life-cycle of the shad and herring, no impoundments should be allowed to impede their course.



Deer Creek near mouth in Susquehanna State Park

The first riffle above the tidewaters, in the vicinity of Stafford Bridge, is considered the principal habitat of the Maryland darter, *Etheostoma sellare*, an obscure two-inch long fish.



Maryland Darter *Etheostoma sellare*
(slightly enlarged)

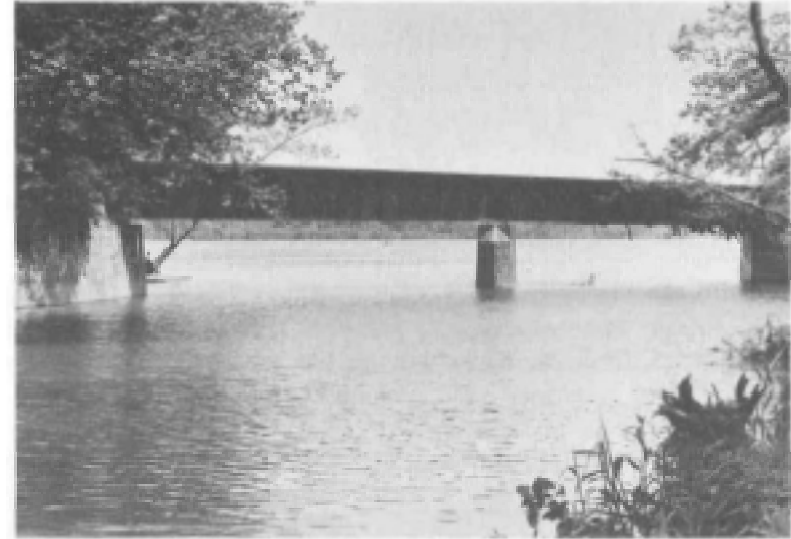
Very little is known about this fish, which is listed as an Endangered Species throughout its range in the Northeast, and has been observed in only three creeks in Maryland since 1912. The life habits and past geographical distribution of the darter are in many ways a mystery. Its preferred habitat is thought to be the riffles of Coastal Plains streams.⁶ Because it presently maintains a very small population and its preferred habitats have either been inundated by the Ches-



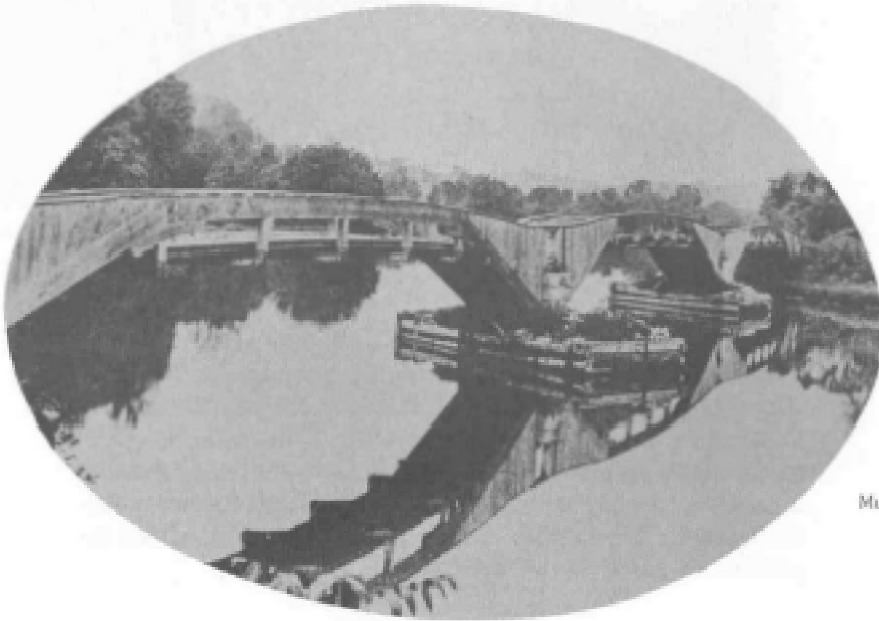
Stafford Riffle, home of the Maryland Darter
(as viewed from Stafford Bridge)

apeake and the Susquehanna, or heavily silted and polluted, the Maryland darter seems destined for extinction. This species should be protected in its natural setting for further investigation and for possible recovery of the species. Until more is known about the darter habitat, changes to existing conditions should be avoided. The Maryland Fisheries Administration can supply further information and advice on protection of the darter habitat.

Susquehanna State Park borders the tidewaters near the mouth of Deer Creek. Along this stretch, a stone iron furnace by Stafford Bridge, the channel of the former Susquehanna and Tidewater Canal, and a bridge from the old Conowingo Power Company Railroad all display a history of industrial exploitation and subsequent abandonment of the creek. The canal, for example, was built in 1826 and affected many tributaries in its 45-mile course along the Susquehanna River; it had eighteen bridges, nine aqueducts, and four dams. A dam at the mouth of Deer Creek made it possible for canal barges to ascend the creek to Stafford, an important milling and iron center from which many goods were shipped.⁷ Frequent flooding and competition from the railroads brought the canal era to an end in the early 1900's.

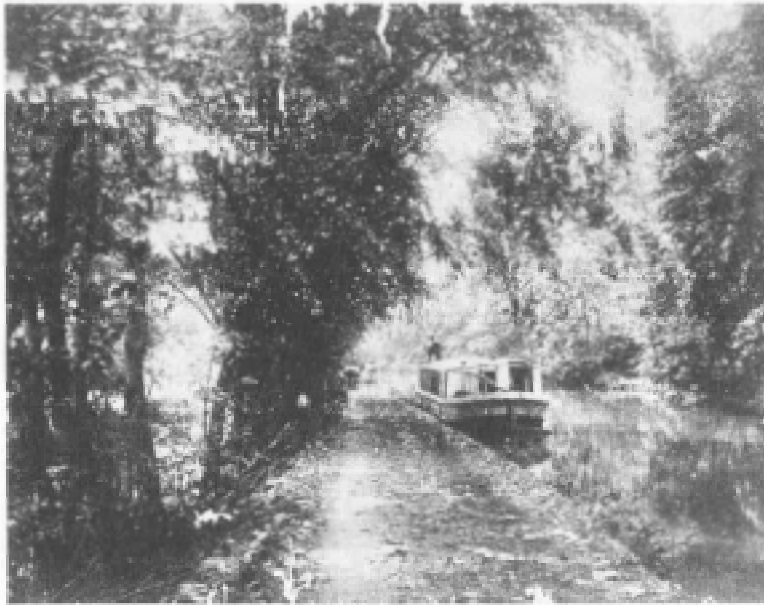


Deer Creek entering the Susquehanna River
(Conowingo Power Co. RR Bridge)



Mule Bridge over Deer Creek, 1870's

Today the lock, dam, and wooden mule bridge no longer exist and the towpath is overgrown and paved in parts. The historical significance of Deer Creek should be developed in Susquehanna State Park. More suggestions for the management of the Deer Creek portion of the park are listed in *Appendix 1*.

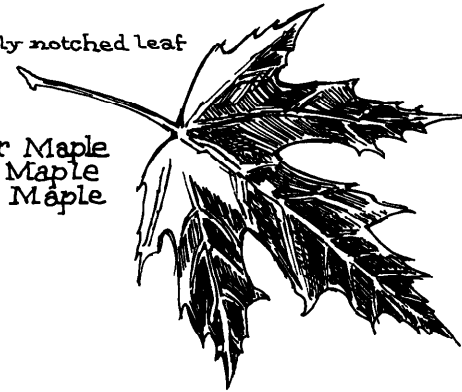


Tidewater Canal today
in Susquehanna State Park

Acer saccharinum

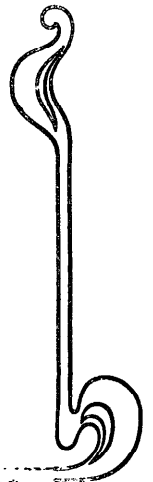
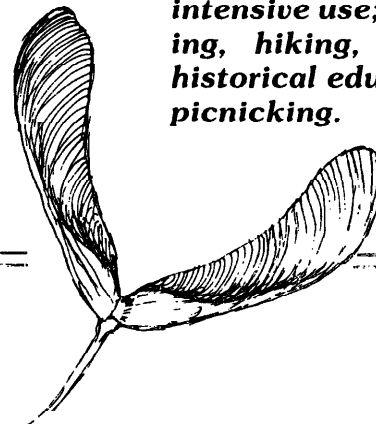
deeply notched leaf

Silver Maple
White Maple
River Maple

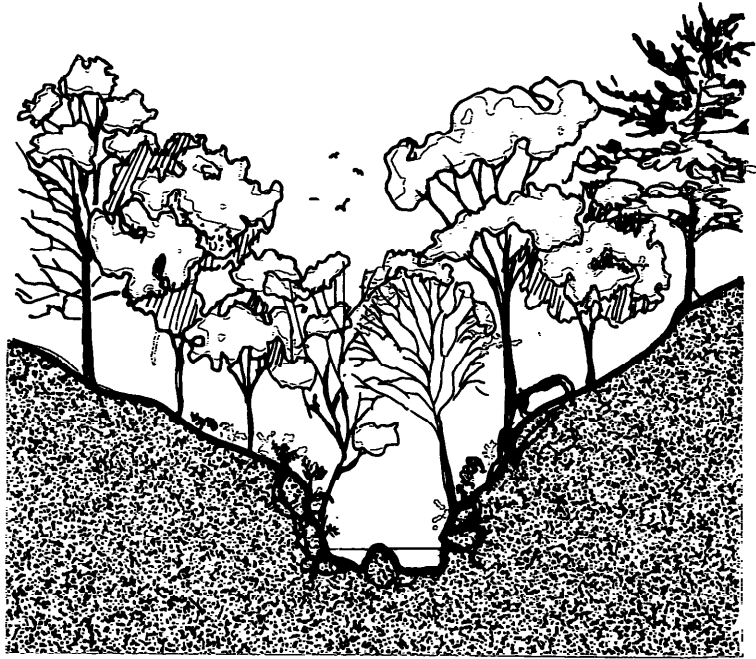


MANAGEMENT RECOMMENDATIONS FOR TIDEWATER

- * Utilize appropriate Soil Conservation Service management practices to minimize erosion.
- * Establish parking areas away from stream.
- * Revitalize canal and other historical features.
- * Provide for litter disposal.
- * Recreation: State Park, designed for intensive use; boating, fishing, camping, hiking, bicycling, nature and historical education, field games and picnicking.



WOODED TORRENT



Torrent streams in a wooded landscape vary in size from fierce rivers to tiny brooks running noisily through a rocky hillside. Typically located in remote settings, away from ongoing human activity, these streams are an intimate and refreshing feature of the woods, enjoyed by hikers and wildlife alike.

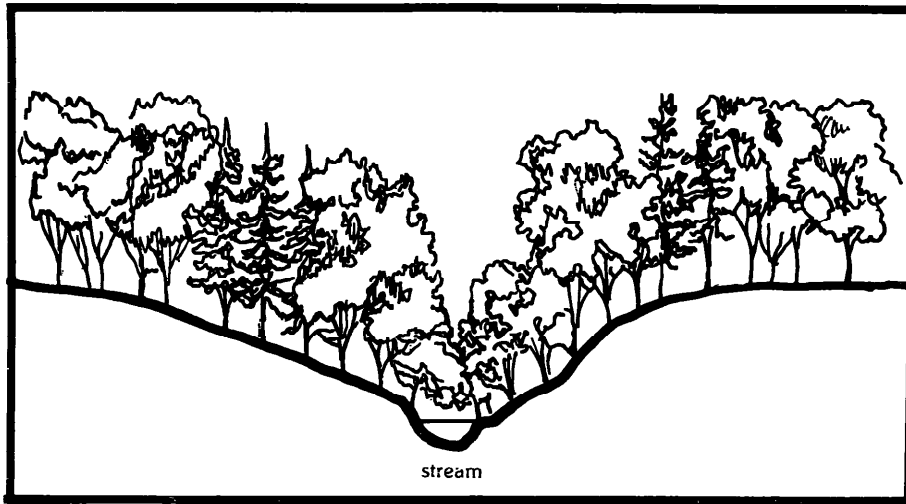
The headwaters of Deer Creek in Pennsylvania and many of the small tributaries in Baltimore and Harford Counties are torrent streams in a woodland setting. The lower stretches of Jackson Branch, Island Branch, and Big Branch are among the wooded torrents which feed the main stem of Deer Creek. These small streams are maintained by surface runoff and groundwater discharge. They play a vital role in sustaining ground-water levels and in sustaining a base level of flow in Deer Creek.

Forests preserve the excellent water quality of torrent streams by stabilizing erodible streambanks and diminishing erosion and loose sediment in the surrounding watershed. An undisturbed forest contributes very little sediment to streams. Root systems and leaf litter of the forest floor prevent erosion from washing topsoil into the streams, while the humus-rich soil conducts large volumes of storm water to deep subsoil storage. The overhanging forest canopy breaks the force of falling rain, prevents excessive evaporation from the streams during the summer and keeps the water cool enough for trout spawning.



Mountain Laurel
Kalmia latifolia

Torrent streams and their particularly fragile streambanks are naturally stabilized by the surrounding forest vegetation and should be protected from human interference. Low intensity recreational activities which do not jeopardize the delicate ecology of the wooded torrent are compatible with this setting. Activities such as hiking, photography, and botanizing are appropriate. Other activities such as hunting, limited camping, and carefully managed logging should be conducted on sites away from steep sloping banks in order to avoid trampling of vegetation, erosion, and to protect downstream water quality.



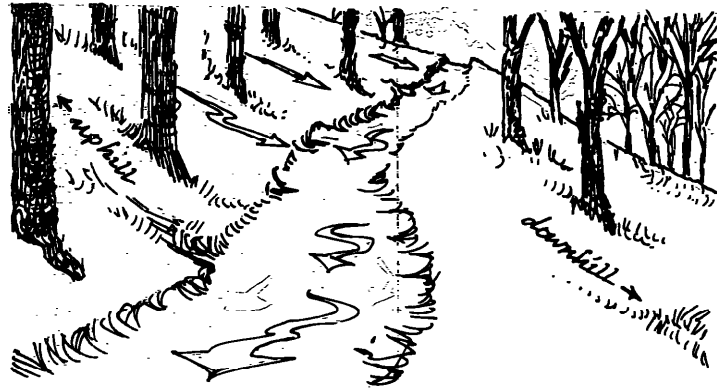
The remote qualities and wildlife habitats of wooded lands are best preserved on privately owned land where human use and access are severely restricted. Along Deer Creek, most wooded torrents are on private property. Where desired public use of the land is only occasional and may not affect normal use of the land by its owner, access can frequently be gained by obtaining permission from the landowner.



Christmas fern ~
Polystichum acrostichoides



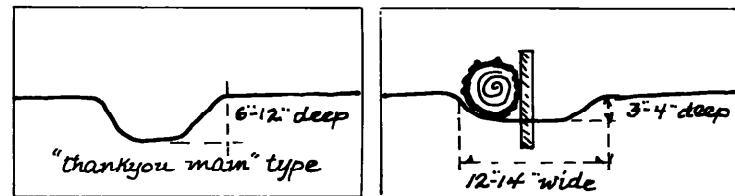
if not diverted, the surface water and sediments run down road or denuded area:



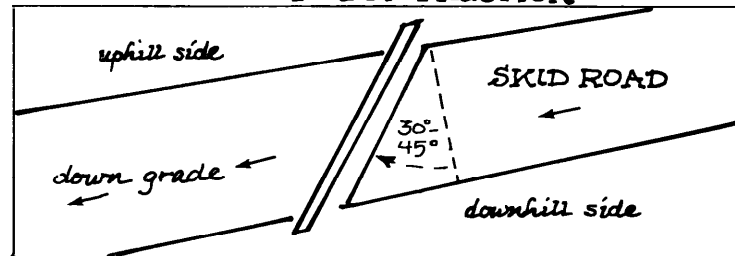
Unique areas and woods paralleled by roads may require additional protection against access and overuse. *Falling Branch* for example flows through private property and is a wooded torrent interrupted by a waterfall cascading down a 30-foot drop over sheer rock. Overhead transmission lines and the nearby *Falling Branch Road* detract from the visual excitement and seclusion of this scene. Further encroachment on this focal point of the torrent stream should be prevented.

The Crowder property is a wooded tract of state-owned land adjacent to Deer Creek, located near the *Madonna Road* crossing. This area, which is frequently littered, requires more stringent management. Some recommended uses of this property are listed in *Appendix 1*.

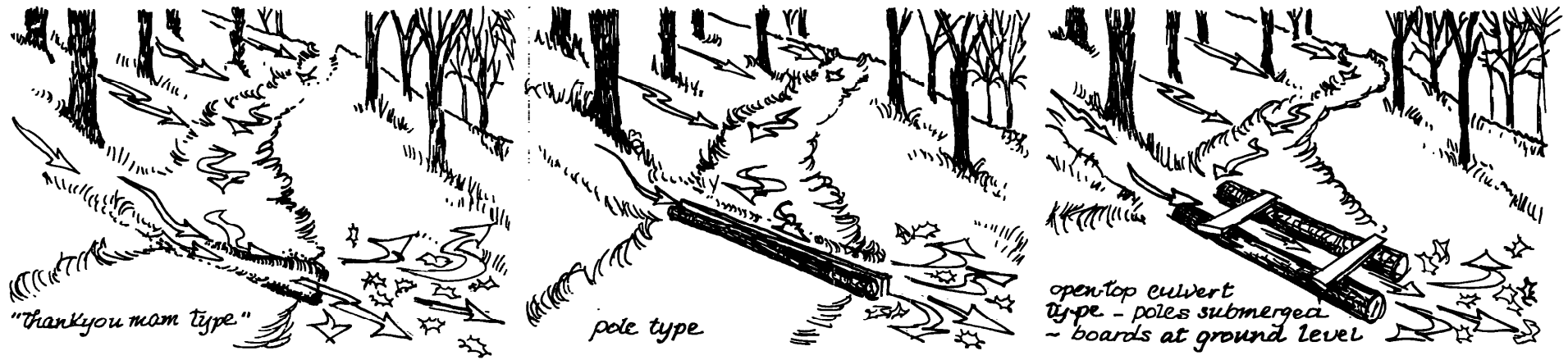
On woodlots managed for timber harvesting, conservation-oriented forest management techniques should be used. Controlled cutting, including clearcutting, provides habitat diversity for wildlife and profit for the landowner. It also utilizes a renewable forest product. Clearcutting should be avoided, however, in fragile areas — such as those along streams and those with steep slopes or unstable soils. The natural beauty of the forest can be protected by maintaining a vegetative screen to keep cutover areas from view and by modifying the edge areas to match the contours of the land.



WATER BAR CONSTRUCTION



with simple diversion devices the surface water and sediments are dispersed locally:

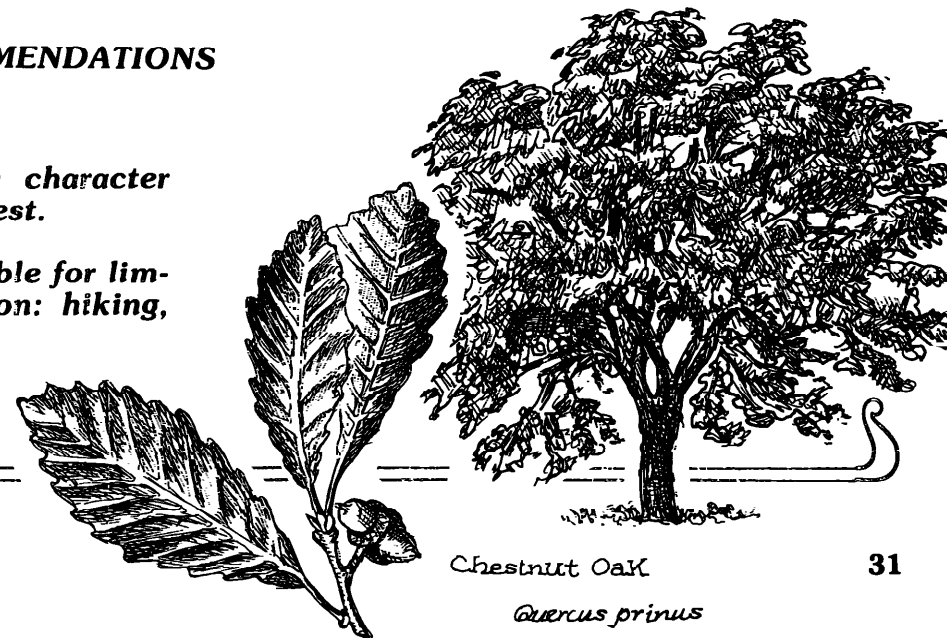


Properly constructed roads on logging operations are the key to minimizing soil erosion and stream sedimentation. Exposure of the soil from road construction should be the logger's chief concern in maintaining stream quality. Roads of low grade (less than 10% slope), and diversions spaced at intervals determined by the road grade, reduce the erosive force of water draining off logging roads. A permeable but relatively non-erodable surface will reduce the amount

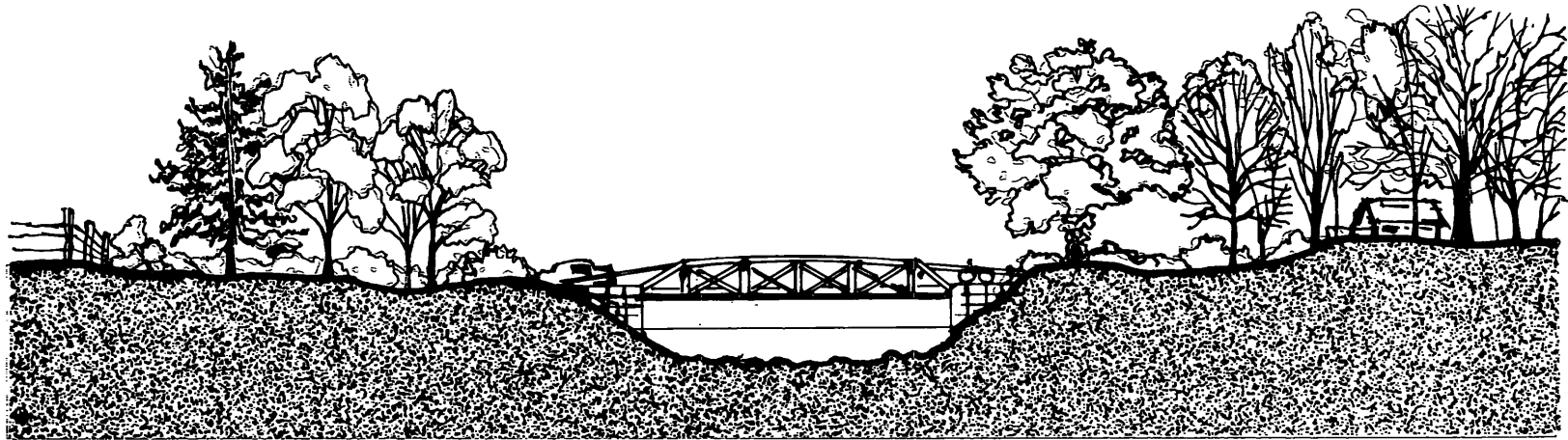
of sediment derived from the road, while trees and debris dropped below culverts with heavy water flow will trap much of the sediment before it is carried to the streams. Roads should cross streams at right angles to prevent road washout. Information on both forest management and logging road specifications is available from the Maryland Water Resources Administration and Forest Service.

MANAGEMENT RECOMMENDATIONS FOR WOODED AREAS

- * **Preserve delicate character of stream and forest.**
- * **This area is suitable for limited use recreation: hiking, contemplation.**



RURAL POOL & RIFFLE

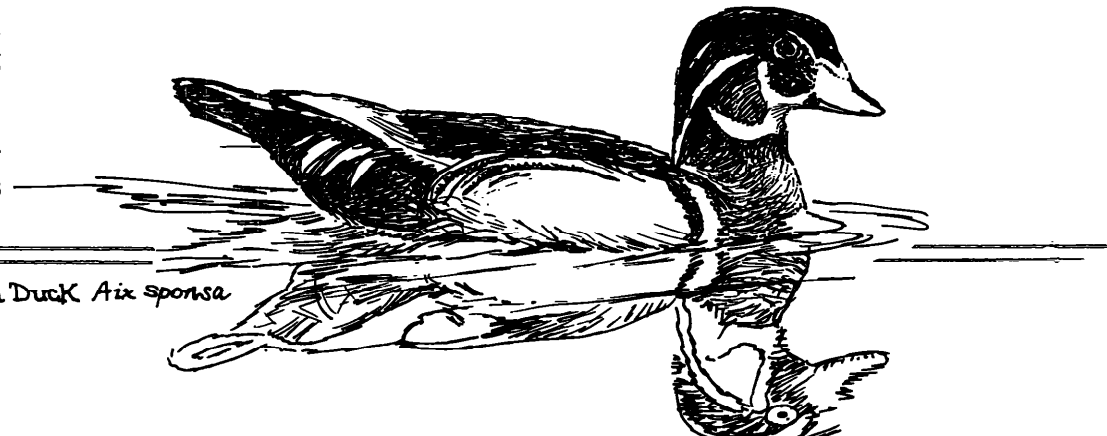


The rural pool and riffle stream runs through fields and forests, both elements of the Deer Creek Valley. Scattered homes, secluded cabins, roads and bridges are familiar features of the landscape along the stream. The rural landscape contributes significantly to the attraction that Deer Creek has for trout fishermen, campers, and others who enjoy the outdoors.

The fast flowing pool and riffle stretches of the creek and the low intensity of development are responsible for preserving the clean water and wildlife of Deer Creek. Forest vegetation and pasture land bordering the stream minimize erosion and runoff and reduce fluctuations in the stream capacity during periods of floods and low flows.

Recreation along the rural pool and riffle sections of Deer Creek is limited by private land ownership. County roads

parallel to the river make scenic drives and bicycling a popular means of enjoying the cultural and historic character of the river. Bridges and roadsides also provide public access to the stream for activities such as ice skating, swimming, whitewater paddling, and fishing. Trout fishing is popular in the stocked portions of the creek from Smith's Dam to Green Road. Fishing for panfish and gamefish occurs in the other rural pool areas. Public parks and private camps provide camp sites and picnic areas which enhance the recreational use of the stream.

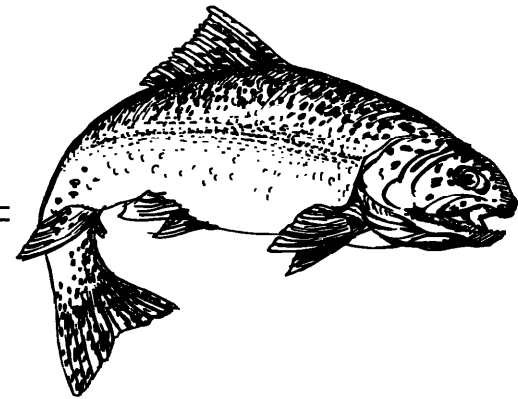


Wood Duck *Aix sponsa*

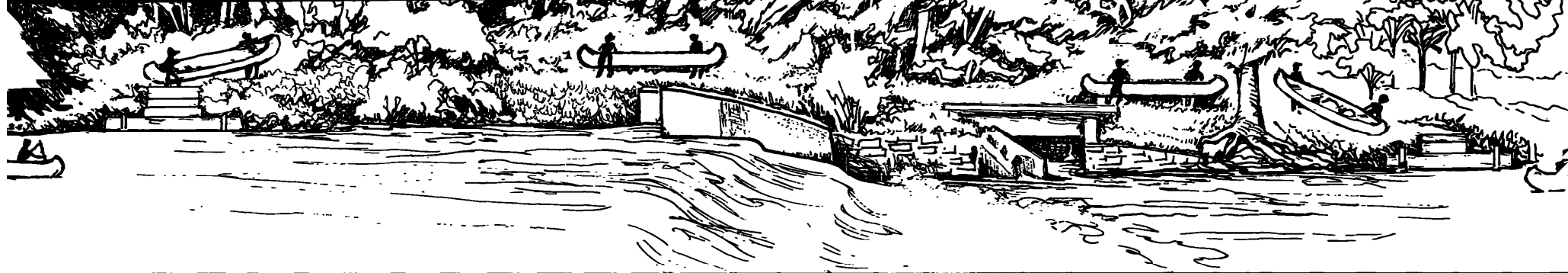


Bridges and roads are a vital part of the rural landscape. Many of the bridges over Deer Creek are small, quaint, and reminiscent of the earlier "Fords" over the stream. The narrow, winding, and "unimproved" or unpaved roads contribute to leisurely appreciation of the landscape. Cement or metal culverts are sometimes used where roadways cross drainageways or streams. Although they are a practical alternative to bridges, they are unattractive and alter the stream's natural flow. Untended highway right-of-ways and dirt drainage channels leading directly to the stream contribute to erosion and runoff pollution, as does the tank-testing area maintained by the U.S. Army Aberdeen Proving Ground. The State Roads Commission imposes an erosion and sediment control program on all contracts granted for highway construction activities. These regulations increase the retention of sediment on the uplands and reduce the exposure time of disturbed areas.

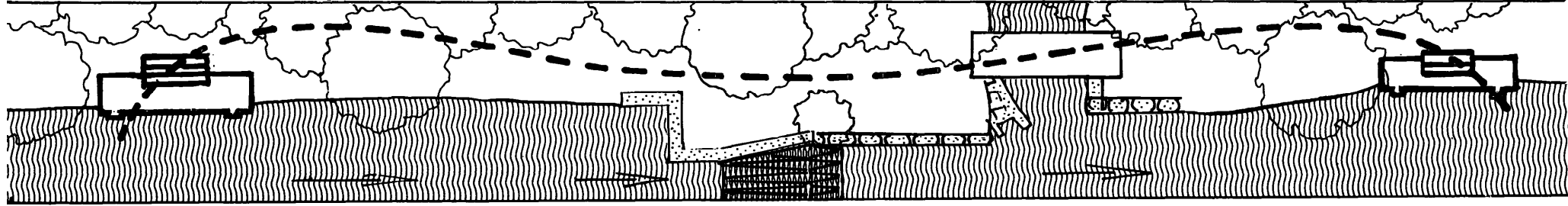
Use of techniques designed to protect trout habitats and to blend in with the natural streambank is recommended to private landowners. The *Izaak Walton League* has developed the "Save Our Streams" program to encourage community action for stream protection. Problems discovered through stream survey by citizens are referred to the appropriate local or state government agency for corrective action or technical assistance. The *Maryland Wildlife Administration*, *Maryland Fisheries Administration*, and *Maryland Water Resources Administration* have detailed information on management techniques that apply to roadside drainage problems as well as rural stream management.



Brown Trout
Salmo trutta fario



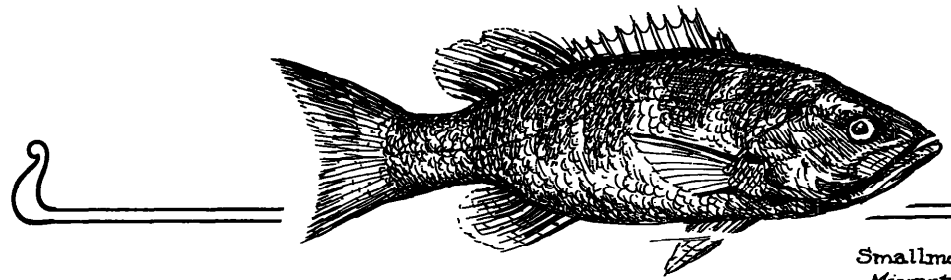
canoe portage around obstruction (dam). Steps, landing, & path of natural materials



Although the recreation compatible with the rural landscape has minor, temporary impact on the stream and adjacent lands, problems occur throughout Deer Creek valley related to the growing number of people interested in outdoor recreation. Indiscriminate spread of beer cans, litter, noise, parking problems, and trespass violations abuse both the privacy and beauty of the setting. Dumping areas on the state-owned Crowder property and Palmer property degrade the river front. In addition to being unlawful and an eyesore, the dumpsites are a non-point source of pollution from which metals and organic debris wash into the creek.

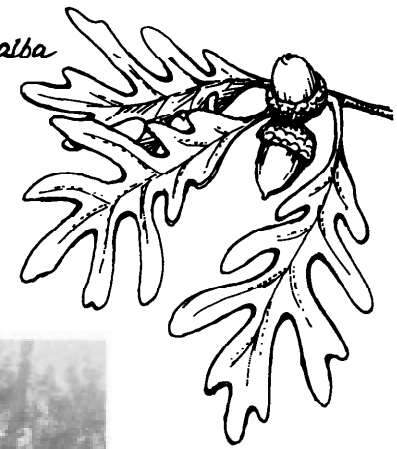
Cars parked along the narrow creekside roads obstruct views of the landscape and constitute a serious traffic hazard.

A variety of tactics and increased cooperation among landowners, county officials, and state officials are needed to better regulate recreational activity for the protection of the creek and private landowners. Existing recreation facilities in public parks and on private lands should be reviewed by county planners to insure that the creek and adjacent lands are not endangered. Any plans to acquire land for public use should include provisions for maintenance and supervision of the land. Additional park land away from the creek might be acquired by Harford County to accommodate large groups and to take some pressure off Deer Creek.

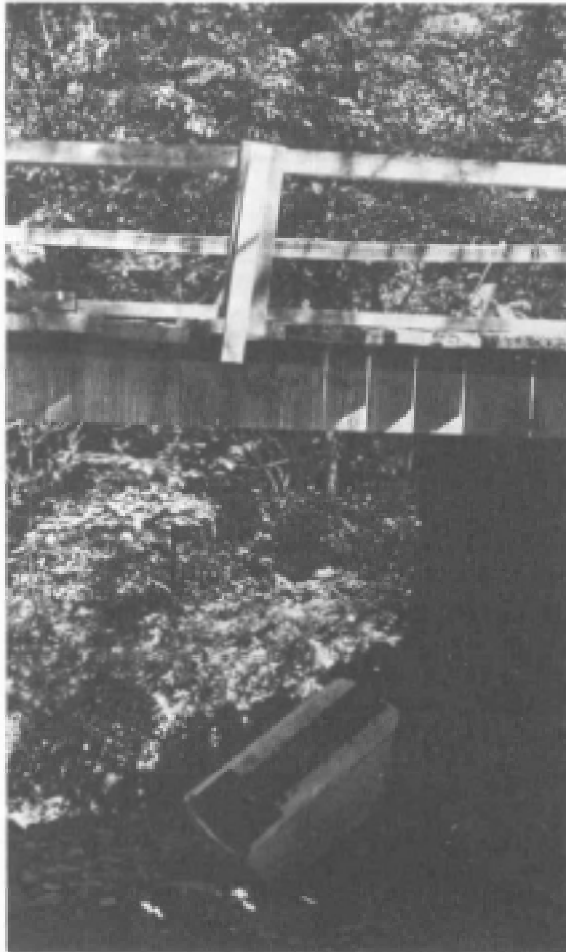


Smallmouth Bass
Micropterus dolomieu

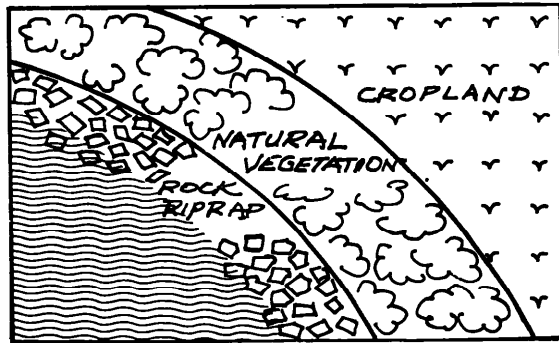
White Oak
Quercus alba



Where there is unrestricted public access to the creek from roads, trails leading to the stream's edge should be provided so that heavy foot traffic does not destroy the streambank. A recently enacted Federal Aid highway program allots funds for the construction of access ramps from bridges and certain roadways during repair or alteration of these structures. At access points, trash dumpsters and maps of public and private property, parking areas and access points downstream should be available. Increased patrolling of the riverfront by county officers and enforcement of trespass regulations will further reduce the abuse of land along the creek.

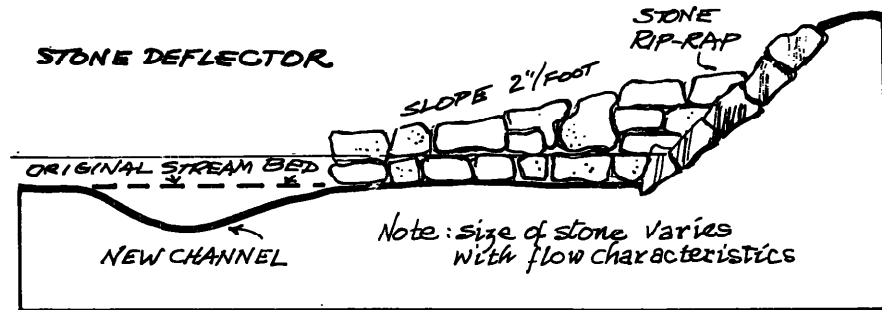


A varied pattern of land ownership adds to the problems of "managing" rural lands along Deer Creek. Private residences, private camps, and vacation cabins dot the landscape on many of the roads which parallel the creek. The State Department of Transportation is responsible for a strip of riverfront right-of-way. Public utilities control Baltimore's Deer Creek Pumping station near Stafford Bridge, and also gas lines and transmission lines in the watershed. The state and county governments determine policy for the several parks fronting the river. The U.S. Army Aberdeen Proving Ground controls use of property just east of Route 136. *Overseeing the use and preventing abuse of the riverfront, though the responsibility of individual owners, must be a cooperative venture.* Guidelines should be adopted by Harford County to direct all landowners toward a consistent policy of riverfront management.

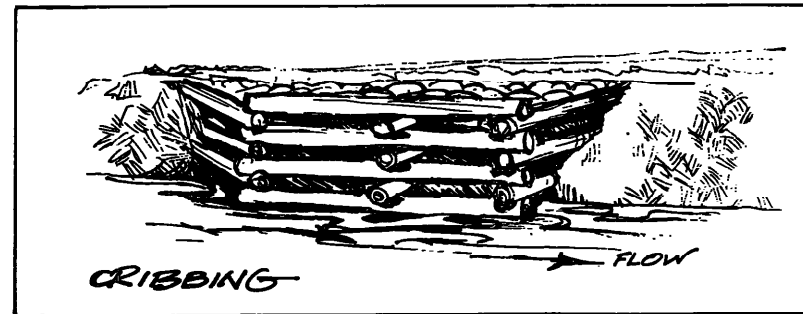


There are many artificial means of improving streambanks and protecting water quality that are within the construction capabilities of the private landowner.

Rip-rap is the reinforcement of erodable streambank using stones and boulders varying in size from 4-5" to pieces several cubic feet in size. Stones are dumped or placed depending on site conditions.



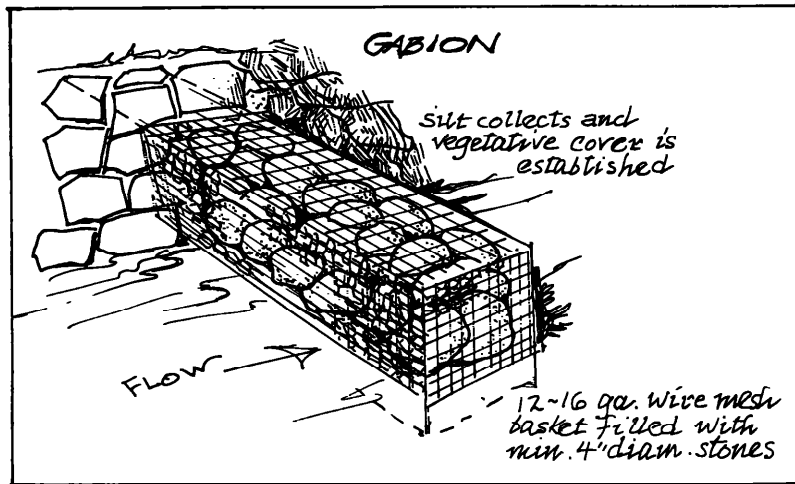
Stone deflectors are used to deepen or clean the channel, create depth and coolness in pools and provide shelter for trout habitats. Deflectors can also be constructed from logs.



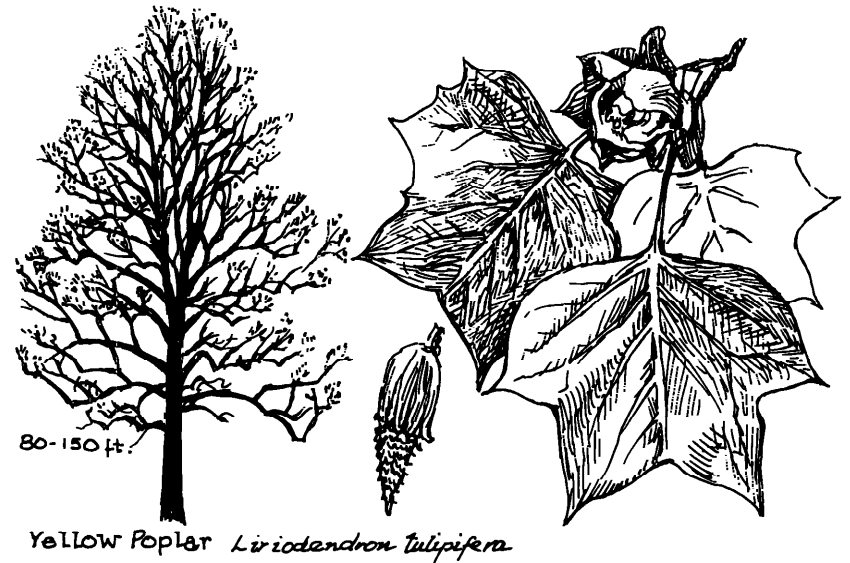
Cribbing is used for closing off alternate stream channels where the stream has eroded a new channel and for protecting streambanks from erosion. Cribbing can be open-faced (with stones inserted in spaces left between logs) or close-faced (logs only, as in the accompanying sketch). Construction method depends upon factors such as soil and stream flow characteristics.

ROCK RIPRAP PROTECTS SIDE SLOPES FROM EROSION
AND BLENDS GRACEFULLY INTO LANDSCAPE

Log Dams are constructed to impound water where pools are desired. There are many different types of dams depending on gradient, width, soil character, etc. These structures are complex in nature and require Soil Conservation Service or Fisheries Department expertise in design and construction.



Gabions are wire baskets filled with rocks and anchored into a slope. Gabions are used to direct stream flow and reduce erosion. Gabions are easy to construct because they are light weight and make use of on-site materials. Also, gabions are natural in appearance because vegetation can quickly re-establish through the wire mesh surface.



MANAGEMENT RECOMMENDATIONS FOR RURAL AREAS

- * Provide public access at stream crossings.
- * Maintain streambank vegetation for wildlife, and fish cover.
- * Respect private property.
- * Recreation: scenic drives, bicycling, canoeing and rafting, trout fishing, inner tubing, landscape painting, and photography.
- * Enforce litter laws.

AGRICULTURAL POOL & RIFFLE



Rolling piedmont farm land characterized by barns, silos and expanses of pasture and tilled fields, creates a distinctive and attractive setting for Deer Creek. *Approximately 70 percent of the acreage within the Deer Creek valley is farm land of some sort. Most of the remaining 30 percent is forest or woodlots, also managed by farmers.*⁸ Cornfields and pastures of dairy and beef cattle are common features along the shoreline. The farm scenery prevents waterfront development from degrading the valley and preserves diversity in an ever-urbanizing area. The beauty and sense of tradition associated with Deer Creek remains intact under the farmer's caretakership.

Where farm land fronts Deer Creek, conflicts arise between agricultural use of the land and recreational use of the stream. This is not surprising since cows and canoeists have similar preferences for shade, tranquility, water, and unrestricted movement. Fencing across the stream presents a

special problem, since it is necessary to some cow pastures but hazardous to canoeists. Recreationalists must respect trespass and litter laws and take particular care not to interfere with farm operations by disturbing shoreline vegetation, crops, or livestock in or near the creek. Any fishing or hunting on farm land requires permission from the landowner. Activities such as photography, landscape painting, or canoeing for small numbers of people, are compatible with the agricultural setting.

Deer Creek has excellent water quality — particularly in the upper reaches of the stream. Nonetheless, non-point source pollution is a cause for concern along the creek. Non-point source pollution is described as pollution which comes from a general area and is difficult to locate or control. The *Regional Planning Council* is currently studying agricultural, suburban, and other land uses to determine their effect on water quality.



Red Fox
Vulpes fulva





Eastern Red Cedar
Juniperus virginiana

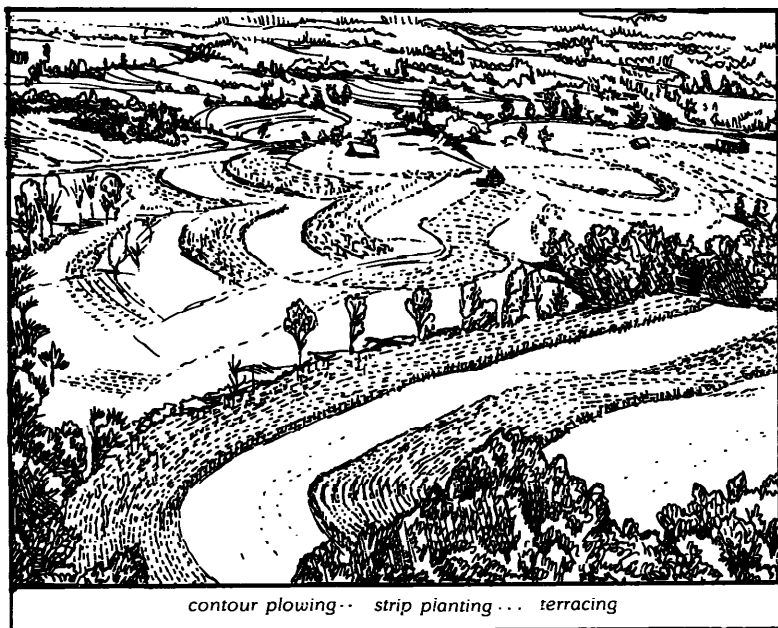
Landowners, farmers, developers and recreationalists should recognize the potential pollution which may result from intensive bare earth areas along the creek caused by trampling by people and cattle, grazing, cultivation, and earth moving.



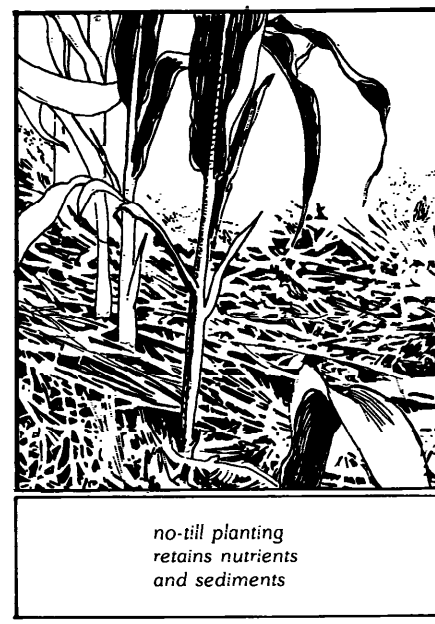
rushing water carries nutrients
and top soil with it to stream



Agricultural and conservation techniques for protecting our soil and water resources are addressed by the Water Resources Administration in its water quality plans.



A great variety of agricultural techniques have been designed to conserve soil losses. *Contour plowing*, *strip cropping*, and *crop rotation* are standard methods of reducing runoff and soil erosion. Two new systems that reduce soil erosion are receiving increased acceptance. In the *no-till*



planting system, the previous years' crop residues protect the soil surface from erosion throughout the year. *Conservation tillage* is a system in which some, but not all crop residue is plowed. Both of these practices allow for greater absorption of rain, which reduces runoff.

The Harford County Soil Conservation District can supply farmers and other landowners with advice and financial assistance with many soil conservation practices. At present, approximately 85 percent of all the farmland in Harford County has conservation agreements approved and on file with the Soil Conservation District.

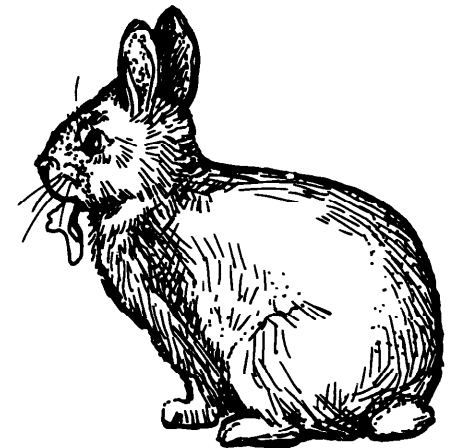
Water quality and farmland alike are threatened by the continuing growth of residential and commercial areas. In Harford County, economic and residential development are proceeding on a slow but inevitable course, and with the increase of development on a regional scale, farmland is becoming an increasingly rare and valuable commodity which requires protection.

Local zoning ordinances, long-term county planning, and creation of a state agricultural land preservation program are among the recent efforts to discourage subdivision development on prime farmlands. Most of the Deer Creek watershed, for example, is zoned agricultural, or "A-1" with restrictions placed on construction within this zone. Before a plat can be rezoned for non-agricultural uses, detailed plans must be reviewed and approved by various county agencies.

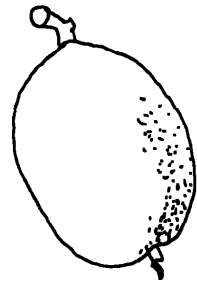


The Department of Agriculture administers a voluntary program to protect farmland. The Maryland Agricultural Land Preservation Program offers support to owners of farmland who want to insure their property against development by negotiating easements. Details about county participation, funding, and criteria for easements are available from the Department of Agriculture.

Because zoning and easements are relatively new and untested methods of preserving land uses, it is impossible to judge their effectiveness. These methods should be viewed as tentative first steps in attempting to protect undefinable values of open land. In the words of Ian McHarg — noted landscape architect, "It is extremely difficult to defend agricultural lands when their cash value can be multiplied tenfold by employment for relatively cheap housing. Yet the farmer is the country's best landscape gardener and maintenance work force, the custodian of much scenic beauty. Mere market values of farmlands do not reflect the long-term value or irreplaceable nature of these living soils." 9



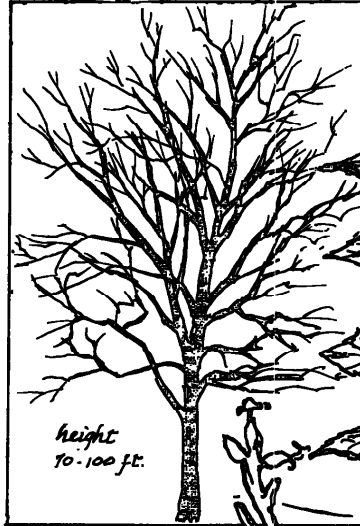
Eastern Cottontail Rabbit
Sylvilagus floridanus



nuts - Oct - Nov.

Black Walnut
Juglans nigra

leaves 12"-24"



height
70-100 ft.



catkins
April - June



Red-bellied Woodpecker
Certhrus carolinus

MANAGEMENT RECOMMENDATIONS FOR AGRICULTURAL AREAS

- * Utilize appropriate Soil Conservation Service management practices to minimize erosion.
- * Use sound agricultural practices (e.g. contour plowing and careful application of fertilizer and pesticides).



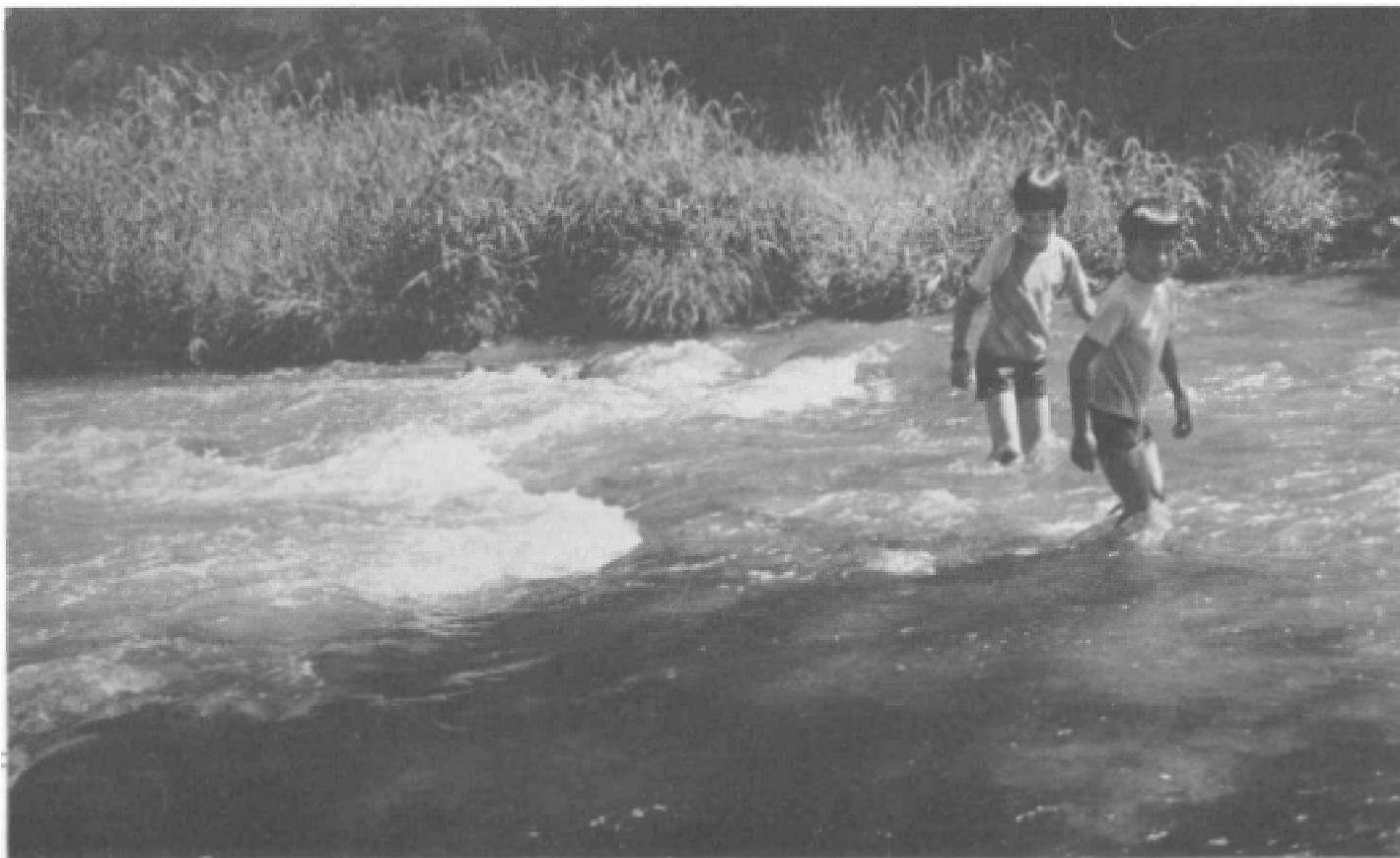


Raccoon Procyon Lotor

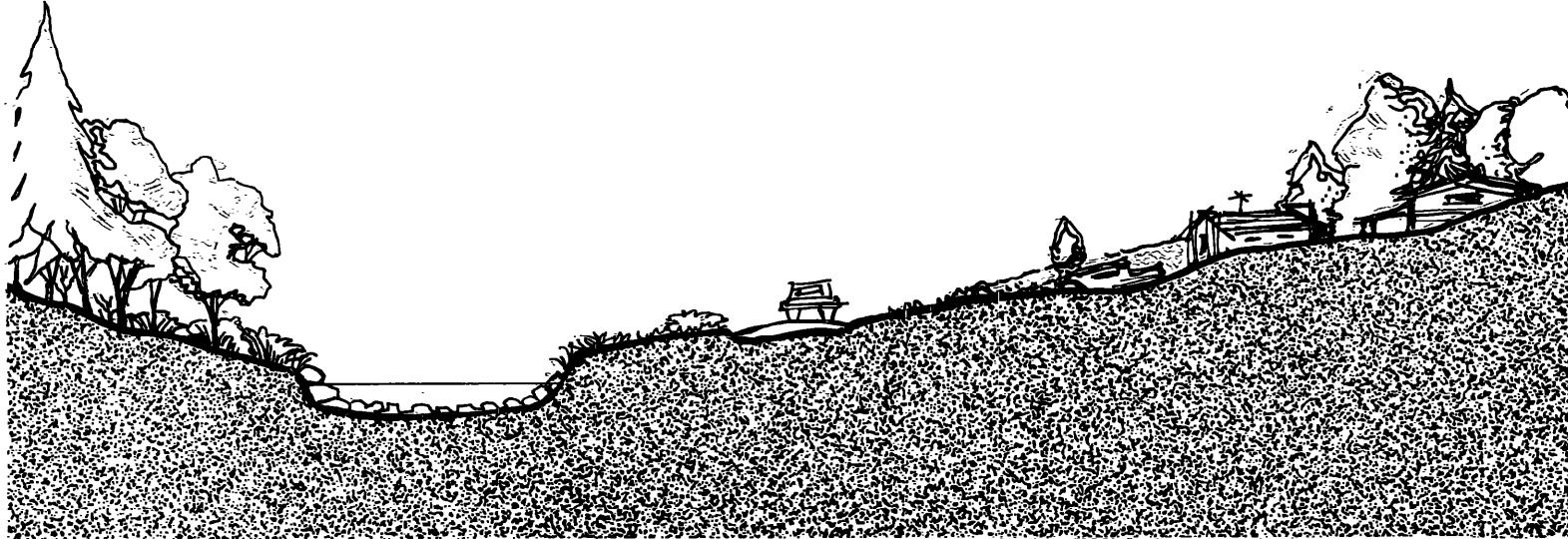


Green Ash

Fraxinus pennsylvanica



SUBURBAN POOL & RIFFLE

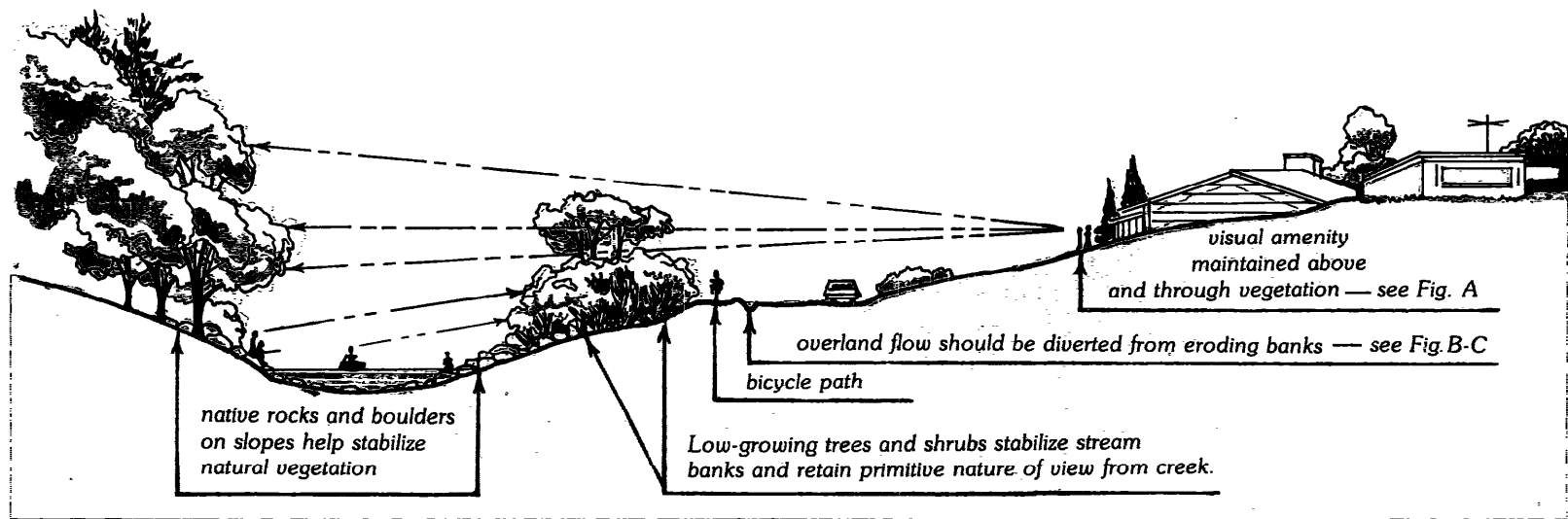


A regularly spaced arrangement of single family homes separated by driveways and grassy private lots identifies the suburban landscape. This is a predominantly residential environment, with densities ranging from two to three dwellings per acre to large ten-acre lots. The suburban pattern of development is commonly found as the outward extension of an urban or commercial center, strung along a highway and blurring the distinctions between town and country landscapes.

In many areas the course of a pool and riffle stream gives structure to the suburban pattern. The topography of the

stream valley defines and separates suburban communities, while the stream and opposite stream bank provide an attractive focal point for the local community.

Because the stream is fast-flowing and can rapidly cleanse itself, it can withstand the various recreational uses such as bank-fishing, wading, or general exploring which are likely to occur. A bikepath or walkway along the stream built on the roadside right-of-way, would improve access to the stream while separating the stream users from road traffic.



The suburban creekside areas are located on the stretch of river between the southern end of Rocks State Park and the Ady Road crossing. (Refer to maps D & E.) The large boulders which make up the streambank in this stretch of Deer Creek protect against trampling and erosion as well as destruction of the streambank from flooding. However, excessive runoff over driveways, road surfaces, and the closely cropped lawns remain as threats to the quality of the creek.

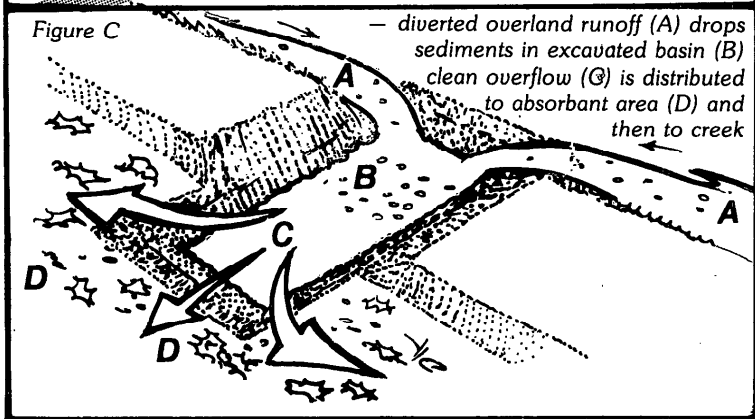
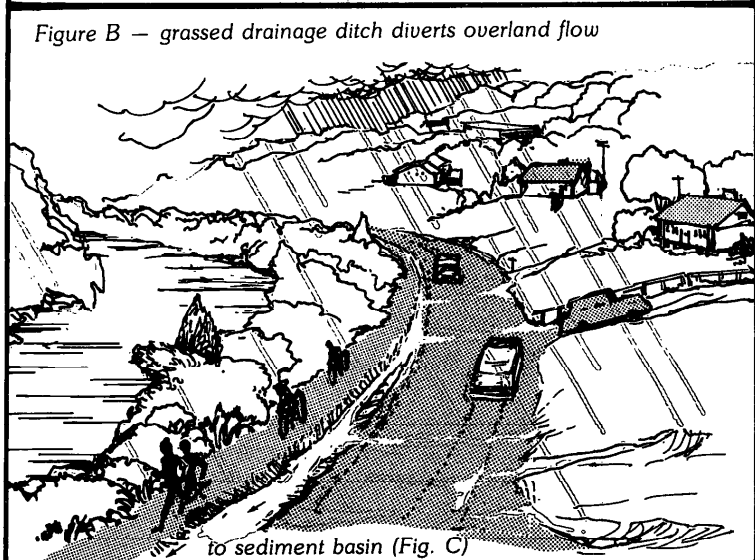
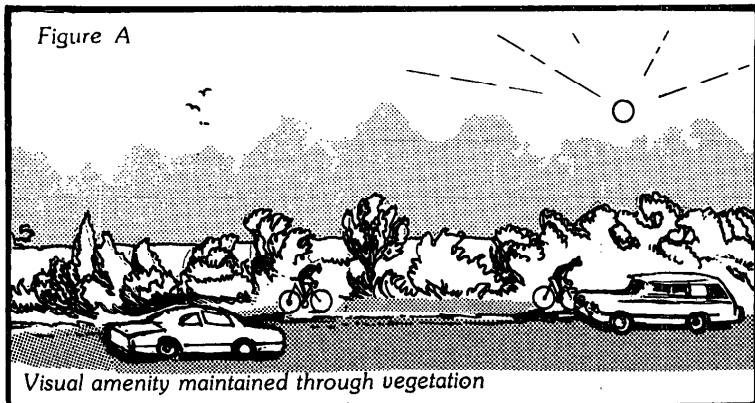
To prevent concentrated runoff from pouring into the creek after a storm, drainage ditches and sediment traps should be maintained. Shrubbery should be planted between the road and the creek as a buffer. This would also act as a vegetation screen, shielding canoeists from view and providing a soft, natural edge for the residents in homes overlooking Deer Creek.

For the suburban area on Walters Mill Road, the undeveloped hillside on the opposite streambank is an attractive contrast to the built up neighborhood. The County or community should consider acquiring this as a

neighborhood park, preserving it as open space with provisions for maintenance and supervision of the area.

As demands for housing increase, developable lands near the stream will be in greater demand. The *Harford County Master Plan* and zoning ordinances have anticipated this demand and have designated areas in which development is and is not desirable. Special attention must be given to the impact of future development on the quality of the creek. Septic tanks and sediment from construction are non-point source pollutants which are a potential threat to the creek. Sewage treatment facilities, water mains and sewer lines, overhead transmission lines, and paved roads are among the public works associated with more extensive suburban development which place a considerable load on nearby streams and rivers.

The State of Maryland recognized the need to reduce the high sedimentation rate associated with construction activities and enacted sediment control regulations. Water quality standards established for construction sites are enforced by the *Maryland Water Resources Administration*.



Any construction that occurs within the Deer Creek watershed is overseen by the Harford County Department of Public Works, which requires temporary dikes to divert runoff to sediment-trapping devices. Slope gradients are regulated and rip-rap, grading, seeding, mulching, sod, vines, and trees are used to further reduce the vulnerability of the soil to erosion.

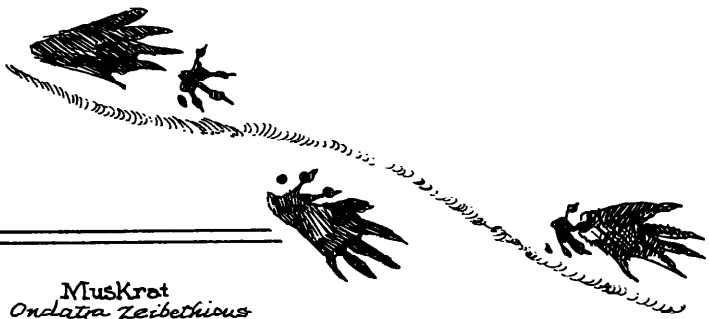
MANAGEMENT RECOMMENDATIONS FOR SUBURBAN AREAS

- * Avoid high density development.
- * In individual developments adopt streamfront open space corridors where continuing maintenance can be assured.
- * Recreation: wading, bank fishing, bicycling, and other family activities.

Opossum

Didelphis marsupialis virginia

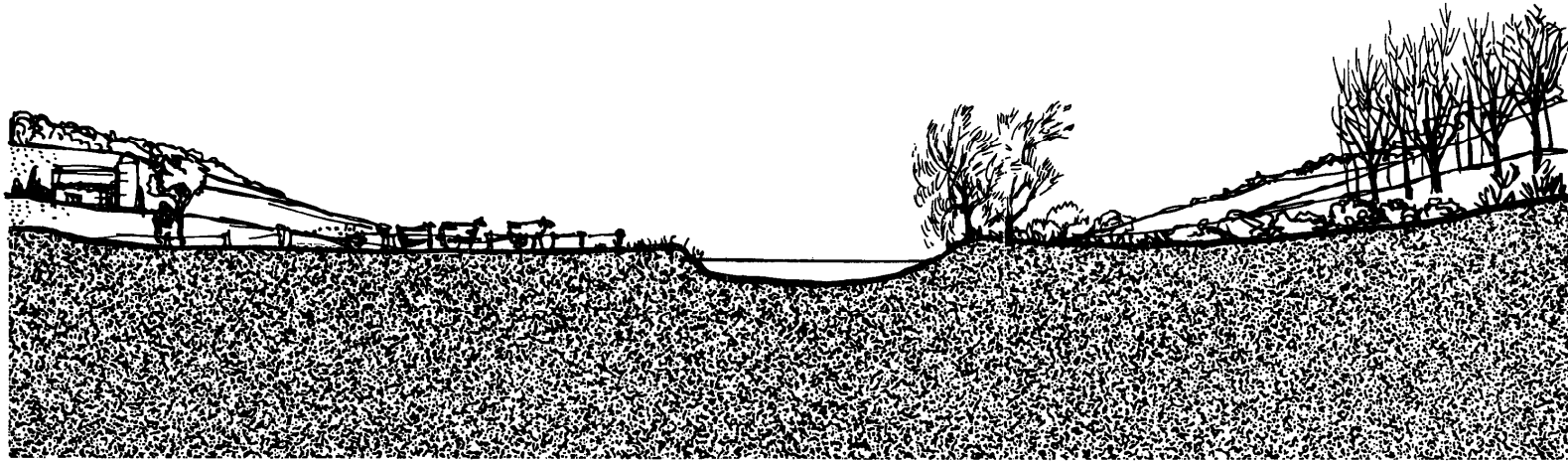




Muskrot
Ondatra Zibethicus

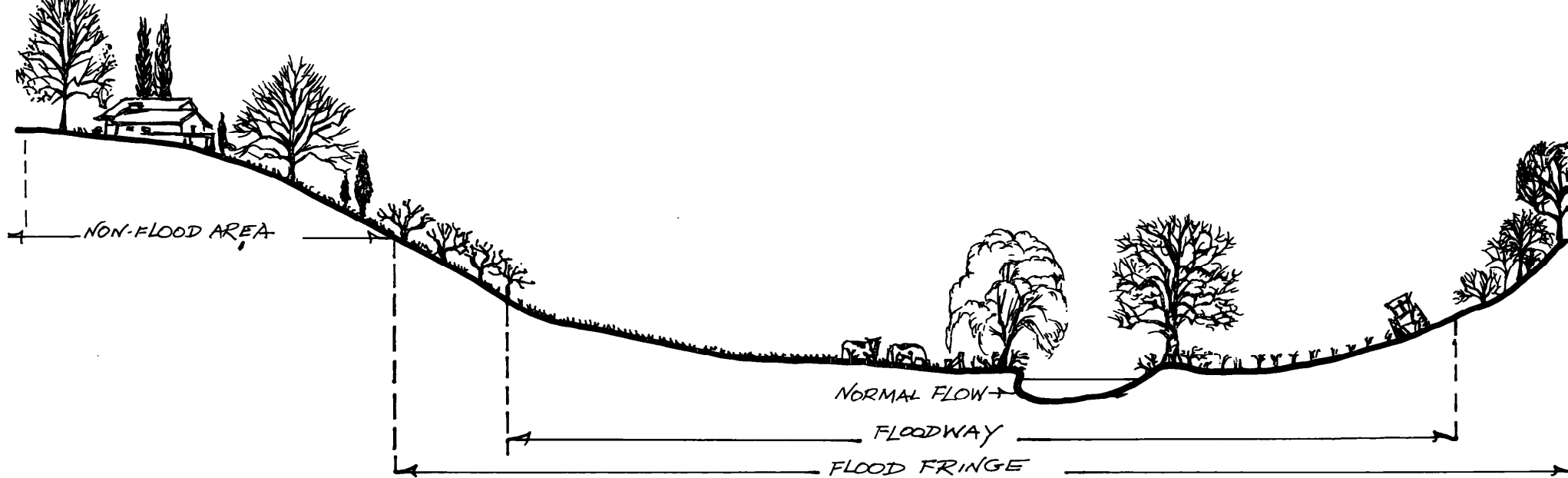
TRACK PATTERN
showing lail drag

RURAL MEANDER



The meandering sections of a stream are gentle, with an almost imperceptible current, cutting through soft clay banks and leaving sandy point bars and deposits in midstream as they wind through the countryside. Broad open valleys with large floodplains are the typical landscape of the rural meander. Roads passing back and forth across a stream generally follow the contour of the river valley, while farms, croplands, and scattered houses extend out to the distant hillsides.

Deer Creek meanders through Harford County in stretches, from just below Jolly Acres to Ivory Mill, again below Eden Mill, by Sandy Hook and east of Palmer property, to name a few. From these flattened valleys, a scenic panorama of the Piedmont is revealed, where some of the bald and pastured hilltops offer views to more distant ridges covered with farms, homes, and woodlots. The view of the land across a broad floodplain and the sense of a large living space are special qualities of the Deer Creek valley which deserve protection for future generations.



Deer Creek is fortunate in having a largely undeveloped floodplain. The edge of the stream is bordered in places by sycamores, willows, and other alluvial hardwoods, fringed by cattail marshes and seasonally wet areas, or sharply defined by cut banks filled with muskrat burrows and bank swallow holes. The many creatures native to Deer Creek benefit from the variety of prime wildlife habitats located along the undeveloped waterway. Left untouched, floodplains store water in time of high runoff, lessening the impact of floods.

Having been carried in by flood waters, the river bottom soils of the floodplain are extremely fertile agricultural areas. Indeed, farming is one of the best uses of these areas, which at the same time, preserves the attractive vista of open space.

Recreational uses of the floodplain — such as ball fields, lawns, picnic sites, boating access and camping areas (without facilities or excessive amounts of sealed surfaces), are all suitable in flood prone areas.

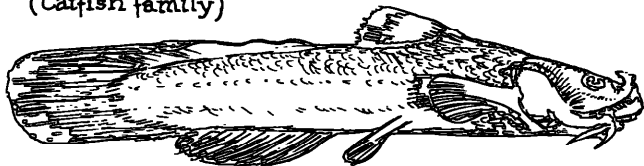


The floodplain is an area deserving close attention and careful management. Because of the coarse-grained soils and shallow subsurface water levels, any buildings in a floodplain are subject to damage or destruction. Development and paved surfaces increase runoff and destroy the water-retaining value of a floodplain. In addition, any overland flow of waste or pollutants may threaten the water quality in floodplain aquifers and wells.

Flood damage along Deer Creek has thus far been negligible. The 100 year floodplain is generally contained in a 600 foot width. In short reaches it widens to as much as 2600 feet.

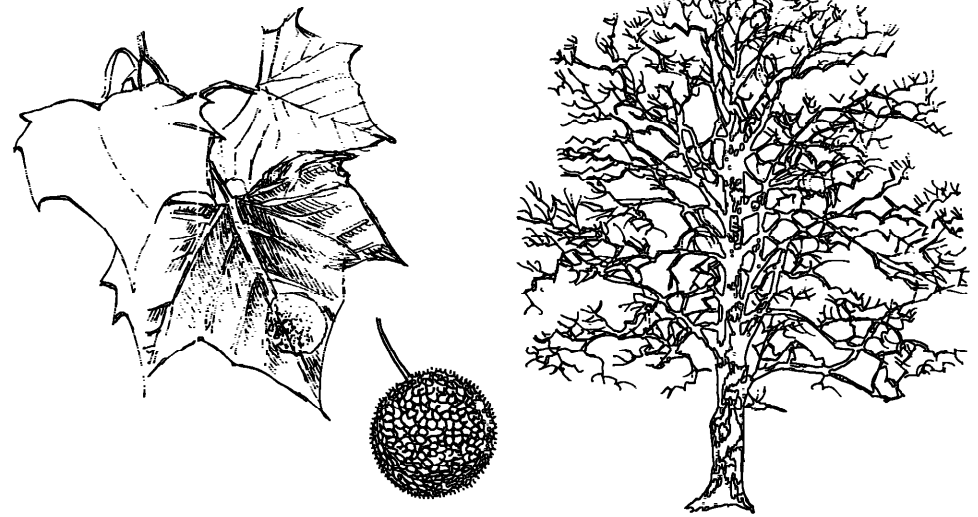
Protection of the floodplain in Harford County is achieved through a combination of the *National Flood Insurance Act of 1968* and local floodplain zoning. This combination is the most substantial and established method limiting further encroachment on the floodplain and providing insurance for already established buildings. Maps designating floodplain boundaries and details of the flood protection program can be obtained from the Harford County Department of Planning and Zoning.

Margined Madtom
(Catfish family)



Noturus insignis: 1.3 x natural size

Sycamore
Platanus occidentalis



MANAGEMENT RECOMMENDATIONS FOR RURAL AREAS

- * Protect floodplain from development.
- * Allow special features such as meander scars, natural levies, and sand bars to remain in their natural form.
- * This area is suitable for crops and pastures.
- * Recreation: canoeing, bird-watching, fishing.



CHAPTER 3 Policy



How can the goal of preserving DEER CREEK in its present state best be achieved, in the face of growing human demands for the use of land and water resources?

This is the question which was repeatedly asked in discussions with the local Advisory Board during preparation of this guide. Although many methods of managing the river and the shorelines were recommended and a host of protective regulations already exist, nothing could be found which was tailored specifically to the stated goal of preserving Deer Creek.

In the course of the discussion, four policies were identified which are needed to insure the well-being of Deer Creek:

- 1. The stream and shoreline must be treated as a unified resource.*
- 2. There must be continuing and careful review of activities which affect the future of Deer Creek.*
- 3. Some means of controlling future uses of the stream and shoreline is needed.*
- 4. Any measures taken to preserve Deer Creek must continue the present patterns of land ownership, because in its present state the river flows through public and private properties, supporting human activities as well as natural habitats.*

How to put these policies into practice was the subject of continued discussions with the Advisory Board. State and Harford County officials were also consulted. The proposals listed below were deemed most effective. They give the County a voice in determining the future of Deer Creek and they can be achieved in the foreseeable future. Taken in combination with the *management recommendations* in the text, they establish a firm commitment for continued protection of Deer Creek.



1. The Harford County Council, by ordinance, recently created a Deer Creek Scenic River District and a Deer Creek Scenic and Wild River Advisory Board. This is an important first step in treating the stream and shoreline as a whole, and it should provide the needed local support and guidance to future decisions in favor of preserving the Creek. It establishes a 150-foot setback from the stream in which buildings and construction are prohibited. It also establishes guidelines for a county appointed local Advisory Board which shall review all County zoning and building permits for lands within the 150-foot setback and shall review and make recommendations to the State and County Council concerning activities which affect the scenic, agricultural, and wild qualities of Deer Creek.

2. The Harford County Soil Conservation District should be sufficiently staffed so that they can develop conservation plans specifically for the Deer Creek Watershed.





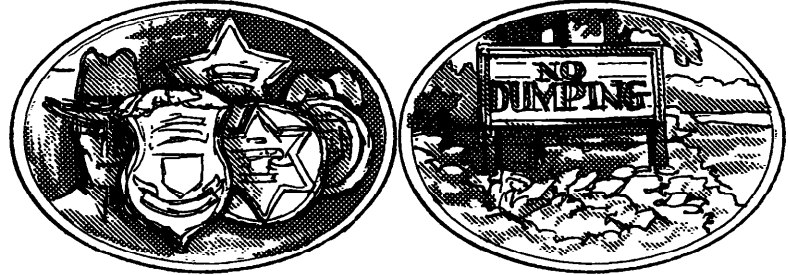
CONSERVATION MEASURES

- * Strive to maintain the natural integrity of the area. Retain natural vegetation where possible and revegetate where necessary. Use natural materials (i.e.: stone, logs, railroad ties, wood chips, gravel, etc.) for paths, access points, or structures. The architecture of any structure should blend into the natural features of that area.
- * Implement measures to prevent erosion and runoff, particularly along paved surfaces and areas of over-use.
- * All state and county properties should comply with federal, state, and local laws, and any special river ordinances.

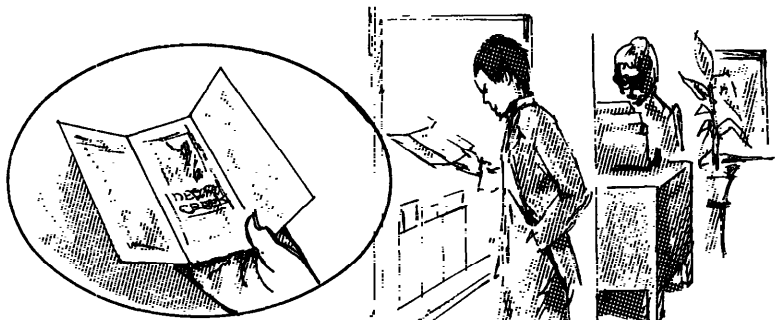


PUBLIC USE

- * Excessive litter is a problem in all state and county properties. Animal-proof litter cans should be provided in intensive-use areas.
- * Scavenger dumping areas should be cleaned up, access blocked off, and no dumping signs posted. State and county police should be informed of these sites, and by patrolling and enforcing strict penalties the problem will be reduced.
- * State and county parks should work with local land owners to alleviate trespassing and littering problems.

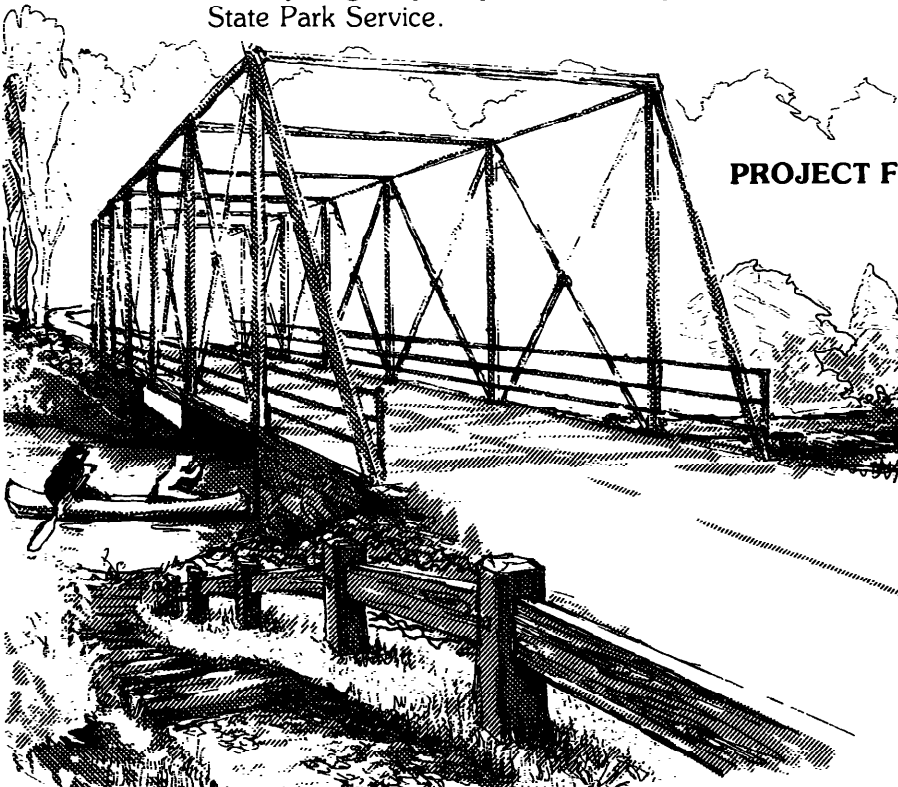
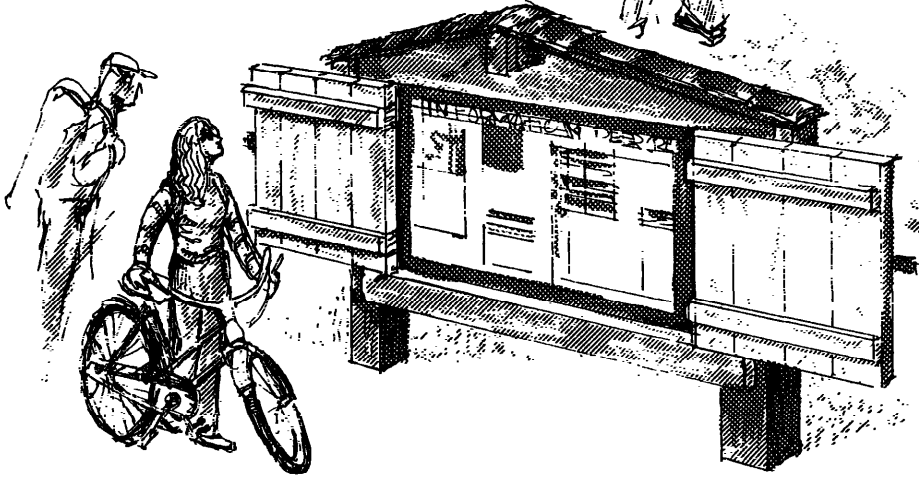


County Property along Deer Creek



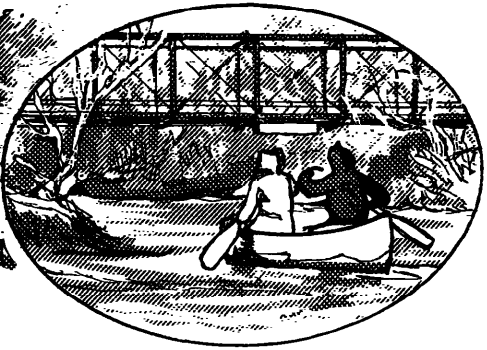
PUBLIC INFORMATION

- * Public information brochures on the state and county properties along Deer Creek should be made available at the parks, the County Chamber of Commerce, County buildings, and DNR buildings.
- * Large bulletin boards should be provided at all parks and posted with park brochures, river access information, regulations, and other items of interest.
- * Public waterway information (i.e.: river mileage and public access points) should be posted on bridge overpasses. This would be accomplished through State and County Highway Department Cooperation with the State Park Service.



PROJECT FUNDING

- * Sources of funding should be explored for the purpose of river clean-up, provision of river access points, and related projects. For example, Section 147 of the 1976 Federal Aid Highway Act provides for river access funding when bridges are under construction or repair.

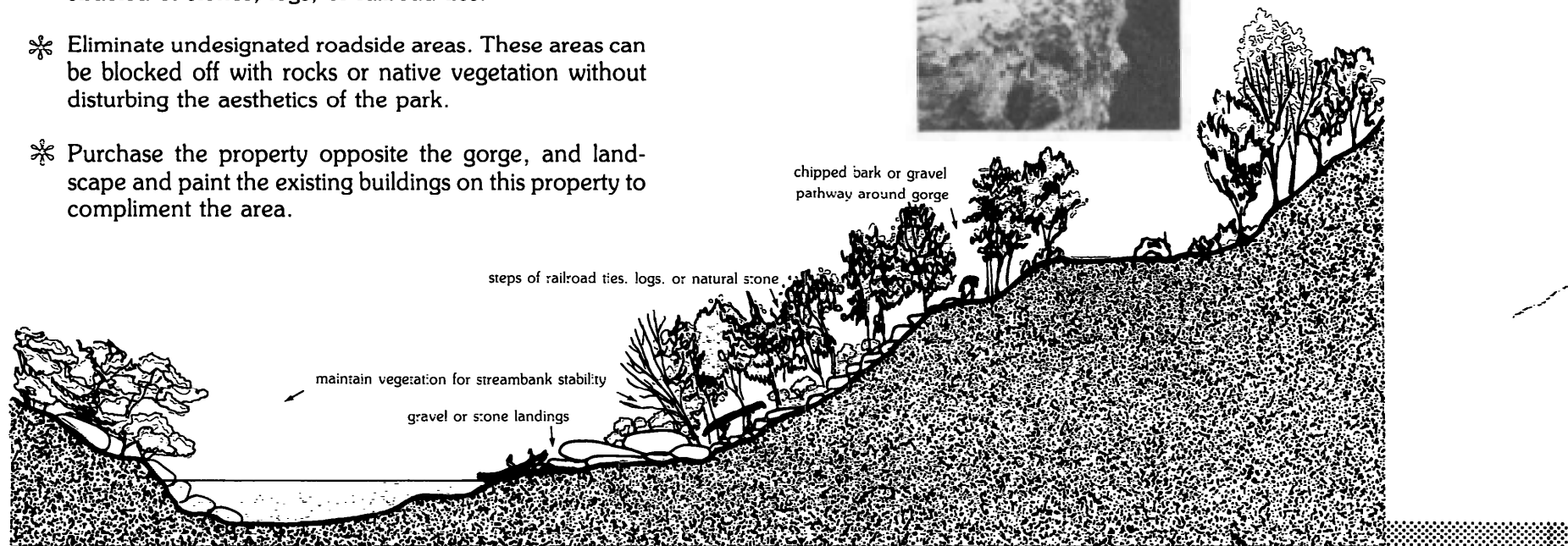


ROCKS STATE PARK

Rocks State Park, located eight miles northwest of Bel Air, is comprised of 682 acres. Park visitors are attracted to the steep-sided gorge and massive boulders along Deer Creek. Facilities include picnic areas, a pavilion, hiking trails, and road pull-offs.



- * Maintain streambank vegetation and natural rock areas to reduce erosion.
- * Rotate or close areas of overuse for revegetation and clean-up.
- * Create a portage area around the gorge by using chipped bark or gravels and techniques to reduce erosion from the trail surface. The steps should be constructed of stones, logs, or railroad ties.
- * Eliminate undesigned roadside areas. These areas can be blocked off with rocks or native vegetation without disturbing the aesthetics of the park.
- * Purchase the property opposite the gorge, and landscape and paint the existing buildings on this property to compliment the area.



STAIRWAY PROPOSAL FOR ACCESS BELOW GORGE AREA — stone, logs, or railroad ties used to maintain naturalness of area.

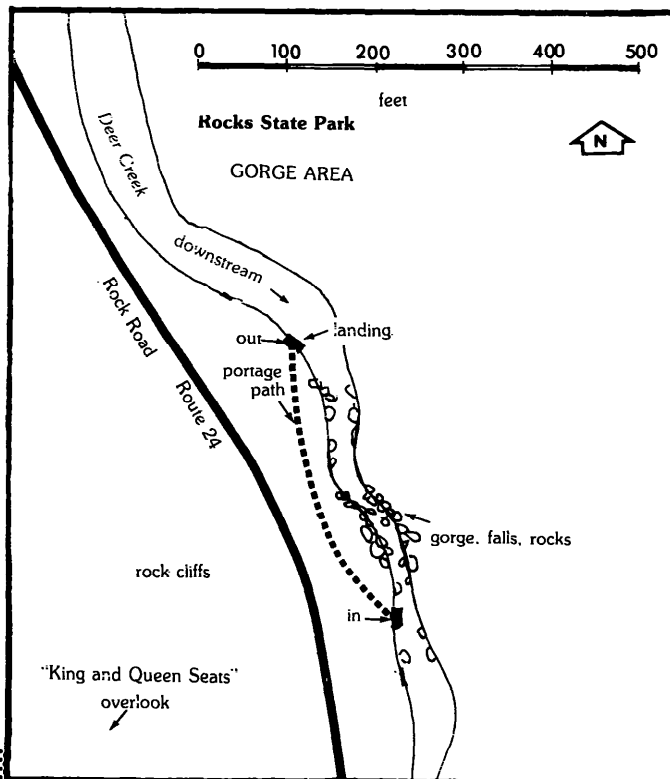


CROWDER PROPERTY OF ROCKS STATE PARK

Rocks State Park contains a noncontiguous parcel of undeveloped woodland along the upper reaches of Deer Creek. Locally known as the Crowder Property, this 150 acre tract has been the site of a traditional summertime fiddling contest. At this time, the State has no formal management plans for the area, but should:

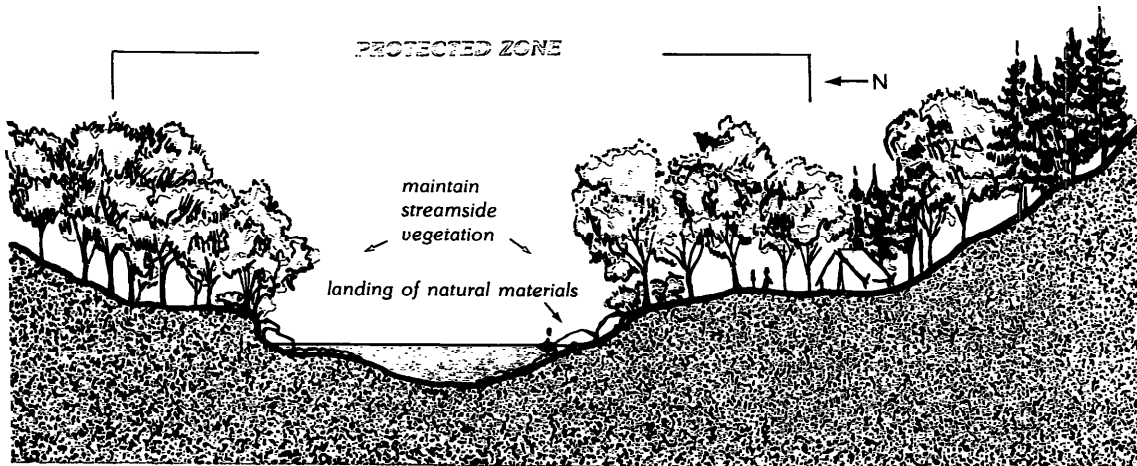
- * Retain the forested character of the area.
- * Plan to develop hike-in camping within the wooded areas. This requires residential personnel.
- * Develop methods to reduce vagrancy, vandalism and litter.

POTENTIAL PORTAGE AREAS



PALMER STATE PARK

Palmer State Park, consisting of approximately 462 acres, borders Deer Creek downstream of Route 1. The Maryland Forest Service has developed a forest management demonstration area on 100 acres on the south side of Deer Creek. The management plan for the forest demonstration area includes provisions for wildlife, fisheries and recreational management, and a system of educational trails is proposed.



PALMER STATE PARK

On the north bank, the state should:

- * Maintain the wilderness character of the area.
- * Maintain and restore historical sites.
- * Develop an access area to the creek and a parking site on the northeast side of the Forge Hill bridge. (Funds are available under section 147 of the *Federal-Aid High-*

Proposed conditions of the campground

- * Resident supervisory personnel are needed.
- * Canoe-in or hike-in only.
- * No open fires; only stoves allowed.
- * Camping permitted 25 feet from the creek edge to avoid overuse of the stream bank.
- * Carry out and properly dispose of all wastes.
- * Use pit-latrines until compatible outdoor facilities are constructed.
- * Use logs or stones for docking areas to reduce shore erosion.
- * The area should be periodically patrolled, regulations posted and fines enforced.
- * Provide overnight parking at a downstream take-out site. Susquehanna State Park is recommended.

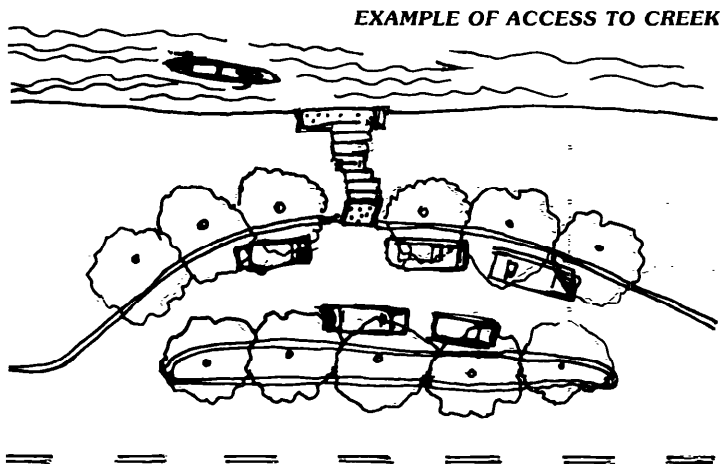
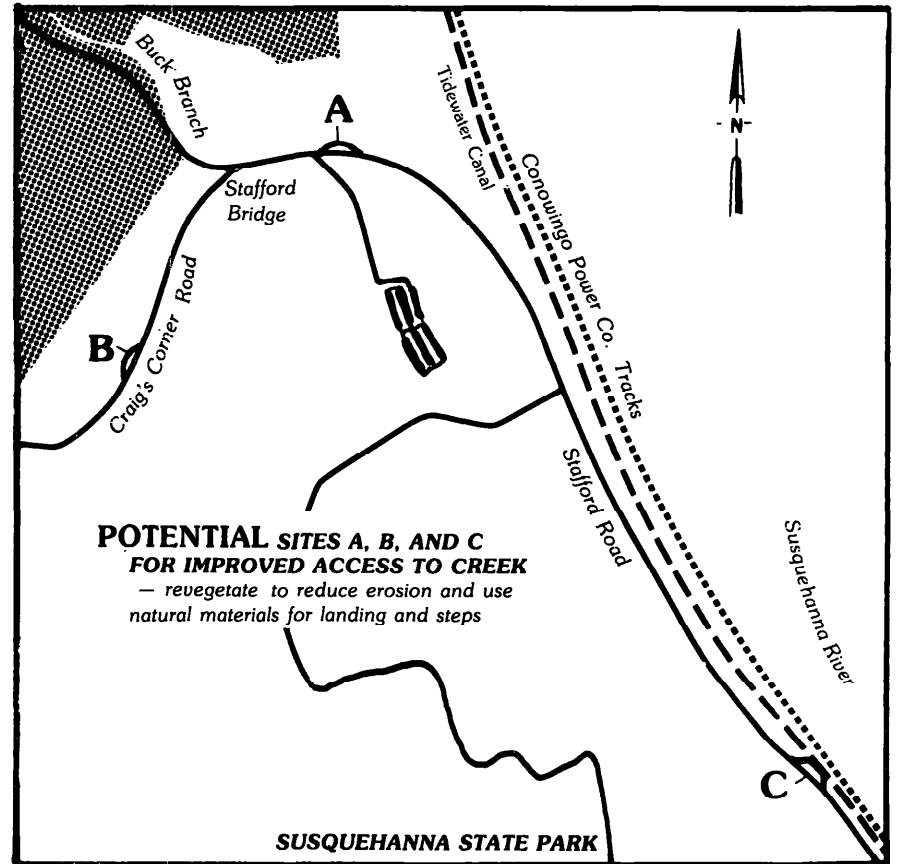
way Act of 1976 for access to waterways when bridges are constructed or repaired.) Personnel must be available to properly manage this area.

- * Design and plan a hike-in/canoe-in campground. This would provide overnight camping for canoeists who want to paddle the length of Deer Creek and may reduce trespassing and vagrancy.

SUSQUEHANNA STATE PARK

A portion of the 2,089 acre Susquehanna State Park is located at the mouth of Deer Creek. Existing facilities at the Deer Creek Picnic Area include a large parking lot and a small pond, however, group shelters, ball field, and a childrens play area are among the proposed improvements for this area. The Deer Creek portion of Susquehanna State Park is intensively used, and special care is needed to maintain the creek.

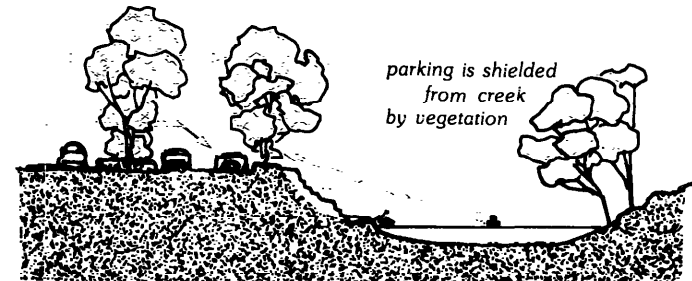
- Areas of overuse, in particular, the undesignated streambank fishing sites, should be temporarily closed and revegetated. Designated access points should be paved or graveled.
- Provide litter cans at all stops along the stream.
- Provide public access points for fishing, wading, and canoeing.
- Restore sections of the Historic Tidewater Canal.



path and stairway
of natural materials

vegetative screen
for parking areas

parking is shielded from
road and creek
by vegetation



Appendix 2: Government Aids to River Protection

— A Source List

Many varied branches of government have responsibility for the protection of rivers and related management programs. This appendix serves as a reference to some sources of protection in the Federal, State and local government. Descriptions of the aspects which apply to land and water use on Deer Creek and other, similar non-tidal streams in Maryland appear on the following pages.

This appendix is intended as an annotated reference for laymen. Summaries of the law are not for official use. To refer to the Federal laws directly, see the General Index to the United States Code Annotated and the Table of Acts by Popular Names for the U.S.C.A. For Maryland laws, refer to the Annotated Code of Public General Laws of Maryland, published in 1957 and updated annually.



INDEX TO SELECTED FEDERAL AUTHORITIES

FLOOD CONTROL

Flood Control of 1936

Flood Control of 1970

Watershed Protection and Flood Prevention Act of 1954

National Flood Insurance Act of 1968

Flood Disaster Protection Act of 1973

WETLAND PROTECTION

Rural Environmental Conservation Program

Water Bank Program for Wetland Preservation Act

SOIL CONSERVATION

Soil Conservation and Domestic Allotment Act

Agricultural Credit Chapter

Bankhead-Jones Farm Tenant Act

Internal Revenue Code — Soil and Water Conservation Expenditures

FOREST MANAGEMENT

Agricultural Act of 1970

Agriculture and Consumer Protection Act of 1973

Sustained Yield Forest Management Act

WATER POLLUTION CONTROL

Federal Water Pollution Control Act
Amendments of 1972



INDEX TO SELECTED STATE AUTHORITIES

DEPARTMENT OF NATURAL RESOURCES

Water Resources Administration

Maryland Wetlands Act
 State Wetlands License
 Private Wetland Permit
 River Basin Plans
 Well Drilling Permit
 Water Appropriation and Use Permit
 Discharge Permits
 Hazardous Substances Certificate
 Toxic Materials Permit
 Sediment Control
 Waterway Obstruction Permit
 Waterway Construction Permit
 Small Pond Permit
 Flood Control and Watershed Management

Energy and Coastal Zone Management

Coastal Zone Management

Capital Programs Administration

Program Open Space
 Land Planning Services
 Wild and Scenic Rivers Act
 State Boat Act

Maryland Environmental Service

Maryland Environmental Trust

Maryland Geological Survey

Division of Archaeology

Maryland Wildlife Administration

Migratory Bird Law
 Non-game and Endangered Species
 Conservation Act
 Wildlife Management Areas

Maryland Fisheries Administration

Cold Water Fisheries Program
 Special Catch and Return Areas
 Angler's License
 Trout Stamp
 Warm Water Fisheries Program

Maryland Forest Service

Woodland Conservation Areas
 Forest Conservancy Districts
 Roadside Tree Program

Maryland Park Service

Natural Resources Police

Licensing and Consumer Services

Interstate Compacts and Commissions

Susquehanna River Basin Compact

DEPARTMENT OF STATE PLANNING

State Land Use Act of 1974
 Critical Areas Program
 Intervention Program

DEPARTMENT OF HEALTH AND MENTAL HYGIENE

DEPARTMENT OF ECONOMIC AND COMMUNITY DEVELOPMENT

Maryland Industrial Land Act
 Industrial Buildings for Counties and
 Municipalities Act
 Maryland Historical Trust

DEPARTMENT OF TRANSPORTATION

DEPARTMENT OF AGRICULTURE

Pesticide Regulations
 Agricultural Land Preservation
 Foundation
 State Soil Conservation Committee

OTHER MARYLAND LAWS



INDEX TO HARFORD COUNTY AUTHORITIES

A-1 Zoning
 R-1 Zoning
 Sub-division Regulations
 Private Waste-Disposal Systems
 Sediment Control Ordinance
 Flood Hazard Control Bill
 Harford County Soil Conservation
 District





INDEX TO SELECTED FEDERAL AUTHORITIES

FLOOD CONTROL

The U.S. Army Corps of Engineers under the Civil Works Program has many responsibilities. Flood control, water supply, enhancing and conserving fish and wildlife, water quality control, and major drainage are among them.

The Flood Control Act of 1936 (33 U.S.C.A. § 701-701u 1970 as amended) authorizes the U.S. Army Corps of Engineers to conduct studies and construct structures for flood alleviation in major streams and the Department of Agriculture to investigate watersheds for flow and erosion control; it also establishes a policy of federal cost-sharing for flood control works. **The Flood Control Act of 1970** extends the authority of the U.S. Army in the Department of Defense to make plans, investigations, and improvements for flood control and allied purposes.

The Watershed Protection and Flood Prevention Act of 1954 (16 U.S.C.A. § 1001-1005 1974) provides for the cooperation of the federal government, state, and local authorities for watershed planning of areas less than 250,000 acres. The plans focus on soil erosion, floodwater, sediment damages, ways to conserve and properly utilize water, and the usage and conservation of land. The U.S. Department of Agriculture offers technical and financial assistance to implement the work plans.

The National Flood Insurance Act was passed in 1968 and extended with the **Flood Disaster Protection Act of 1973** (42 U.S.C.A. § 4001-4003 1973, as amended, Supp. 1977). Administered by the Federal Insurance Administration in the Department of Housing and Urban Development, provisions were made for mandatory flood insurance and local floodplains management efforts. States and localities that are receiving Federal reconstruction funds for flood damage are required to adopt "floodplain ordinances".

WETLAND PROTECTION

Wetland Protection (16 U.S.C.A. § 1501-1510, 1974, Title X of the Agriculture and Consumer Protection Act of 1978)

The Water Bank Program for Wetland Preservation Act (16 U.S.C.A. § 1301-1311, 1974) authorizes long-term land use agreements between the U.S. Department of Agriculture and landowners to conserve water and to protect migratory waterfowl habitats. The USDA can enter into 10 year agreements with landowners possessing prime wetlands for waterfowl nesting and breeding. Agreements include provisions for annual payments to wetland owners and for the renewal of the agreement.

SOIL CONSERVATION

The Soil Conservation and Domestic Allotment Act (16 U.S.C.A. § 590A to 590q-2, 1974) authorizes cost-share payments through the *USDA Agricultural Stabilization and Conservation Service* to farmers, ranchers, and woodland owners for pollution prevention and abatement practices.

Federal grants are also available to promote and aid soil conservation measures. Grants are provided through the **Agricultural Credit Chapter** (7 U.S.C.A. § 1921-1926, 1973) for the establishment of soil conservation practices and the development of facilities for waste disposal and drainage. Loans are also available to public and quasi-public agencies.

Federal, state, and local organizations may obtain loans to execute conservation plans through provisions of the **Bankhead — Jones Farm Tenant Act** (7 U.S.C.A. § 1010-1013a, as amended, Supp. 1974). In addition, loans are available for projects involving control of non-point water pollution. Loans may be used "for installing measures and facilities for water quality management and for the control and abatement of agriculture-related pollution."

The Soil and Water Conservation Expenditures provision of the **Internal Revenue Code** (26 U.S.C.A. § 175, 1967, as amended, Supp. 1974) allows income deduction for expenditures related to soil and

water conservation measures such as leveling, grading, terracing, drainage ditch construction, contour furrowing, and planting of windbreaks. Deduction for any one year may not exceed 25 percent of the gross income from farming.

FOREST MANAGEMENT

The USDA Forest Service provides technical and financial assistance for the following activities: (1) improving fire, insect, and disease control, (2) developing multiple use management so as to obtain optimum potential of forest resources, (3) improving harvesting, processing and marketing of forest products, and (4) to stimulate reforestation and timber stand improvement.

Multiple use management — the concept that land can support more than one use, involving coordinated management of the various surface resources without impairment of the productivity of the land, not necessarily to give the greatest dollar return, but to serve social needs.

The Forestry Incentives Program was authorized by sections 1009 and 1010 of the **Agricultural Act of 1970** (U.S.C.A. 7 § 1305 note, 1973) in addition to **The Agricultural and Consumer Protection Act of 1973**. The objective of the program is to increase the supply of timber by non-industrial private landowners through cost-sharing assistance of expenses for planting trees or improving a stand of forest trees.

The Sustained Yield Forest Management Act (16 U.S.C.A. § 583-583i, 1974) authorizes the establishment of sustained yield units, *i.e.* federally owned and administered forest land and private land covered by cooperative agreements. A reduction in soil erosion, sedimentation, and water pollution are benefits of sustained yield management.

Sustained yield — a method of obtaining an indefinite sustained and uniform supply of timber and other benefits from a given forest stand.

WATER POLLUTION CONTROL

The primary purpose of the **Federal Water Pollution Control Act Amendments of 1972** (33 U.S.C.A. § 1251 et. seq., Supp. 1974) is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." These goals will be achieved through research and investigations and then incorporating the information into comprehensive programs for water pollution control; that is, preventing, reducing, or eliminating water pollution. Grants are available for pollution control programs, research and development, and educational institutions.



INDEX TO SELECTED STATE AUTHORITIES

DEPARTMENT OF NATURAL RESOURCES

Duties of the Department of Natural Resources include stewardship of the State's waters, fish and wildlife, forest, minerals, and recreational resources. The Department directs conservation policies of the State, administers a variety of recreation facilities and services to landowners, and enforces regulations affecting natural resources. When necessary in carrying out any legislative act or other duties, the Department may acquire land, rights to land use, timber and other materials by condemnation.

Water Resources Administration (WRA) plans and supervises the various uses of the State's water resources. Regulations enforced through the WRA are described below.

Wetlands Protection

Wetlands — Areas covered with shallow and sometimes intermittent waters. Wetlands include shallow ponds, usually with emergent aquatic vegetation such as reeds or cattails, but do not include the waters of streams, reservoirs, deep lakes, or water areas that are so temporary as to have little effect on the development of marsh vegetation.

The Maryland Wetlands Act was passed in 1970 to preserve tidal wetland in the face of demands for their use or modification. The act calls for regulation of dredging or filling of State wetlands and preparation of boundary maps delineating State and private wetlands. State wetlands are defined as wetlands in tidal areas below the mean high water mark. Proposed dredge and fill activities require a license from the State Board of Public Works.

Private wetlands are those above the high tide mark but subject to periodic tidal influence. Depending on the nature of the alterations, activities in private wetlands many require a permit from the Secretary of Natural Resources. In addition, any dredging or filling of State or private wetlands requires a federal permit from the U.S. Army Corps of Engineers.

WATER QUALITY AND WATER SUPPLY

Comprehensive 5-year plans for regional *River Basin Water Supply Management* are prepared by the WRA. These contain projections of water demand and plans for meeting federal water quality standards.

A *Well Drilling Permit* must be applied for and obtained from a licensed Master Well Driller before a well can be drilled or driven. NR § 8-603-604 (1974).

A *Water Appropriation and Use Permit* is required before construction begins on any structure which may require the withdrawal of a surface or underground waters. Household water use and farm and livestock water use are exempt from this requirement. NR § 8-802 (1974).

Discharge Permits: Both National Pollution Discharge Elimination System (NPDES) and State Discharge Permits are required for the construction, operation, or alteration of any disposal system which discharges waters or wastes into surface or groundwaters of the State. Discharge permits are also required for the disposal of any pollutant into any storm water sewers. NR § 8-1413 (1974).

A *Hazardous Substance Certificate* is required before hauling any designated hazardous substance. A permit is also required for any disposal system or area for the treatment, storage or disposal of designated hazardous substances. NR § 1-4132 (1974, Supp.).

A *Toxic Materials Permit* is required before one can add toxic materials to surface water for the control of algae, aquatic weeds or fish. NR § 8-1405(d) (1974).

GENERAL CONSTRUCTION

Sediment Control. The WRA reviews and approves the procedures of the counties and local soil conservation district which pertain to soil and shore erosion and storm water runoff control programs. The WRA also reviews and must approve any county ordinances passed to implement the regulations. The WRA is the permitting agency for any State or Federal construction project, or any construction project on State-owned land. NR § 8-1103-1108 (1974).

A *Waterway Obstruction Permit* is required before construction begins on dams, reservoirs, or on ponds in excess of the small pond requirements. NR § 8-803 (1974).

A *Waterway Construction Permit* is required before construction can begin in or alongside a non-tidal stream or any construction that changes the course, current, or cross-section of that stream or its 100 year floodplain. NR § 8-803 (1974).

A *Small Pond Permit* is issued by the WRA after the local soil conservation district approves the design for a pond less than 12 acres in size. All water retention structures must be approved for minimum safety and hydrolic standards. NR § 4-622, 8-803 (1974).

Flood Control and Watershed Management: County and municipal governments are authorized to adopt regulations to minimize danger to life, property and water quality within areas designated flood control areas by the WRA. In addition, WRA assists in developing and updating a State-wide flood control plan. NR § 8-9A04-9A07 (1974, Supp.)

The Energy and Coastal Zone Administration contains the Power Plant Siting Program, The Bureau of Mines and the *Coastal Zone Management Program*.

Coastal Zone Management (CZM) conducts various projects which contribute to greater understanding of Maryland's coastal waters and shorelines. Projects which pertain to non-navigable waters are

- 1) Identification of archeological sites and
- 2) An inventory of upland Natural Areas.

Natural Areas — Areas where natural processes predominate and are not significantly influenced by either deliberate manipulation or accidental interference by man. They include swamps, marshes, forests and stream-banks, at least 5 acres in size and identified on aerial photographs and county maps.

Vegetation, wildlife and physical features of each area

are on record. This information is used as a means of screening a large number of sites for specific uses and for possible designation of State "critical areas".

Capital Programs Administration administers all the land planning, land acquisition and construction activities of the Department. Units with activities pertaining to non-navigable streams are Program Open Space and Land Planning Services.

Program Open Space is funded through a transfer tax on all real estate transactions in Maryland. Half of these funds are used by the State to acquire land for recreation and conservation. The remaining funds are used to reimburse local governments up to 100% of the costs of open space acquisition and up to 75% of the costs of park development. In addition, counties can also use money for a Comprehensive Recreation Plan. The implementation of any open space project partially or fully funded by P.O.S. money must meet the needs identified in the State Comprehensive Outdoor Recreation Plan which was prepared by the Department of State Planning in cooperation with the Capital Programs Administration.

Land Planning Services develops plans for State parks, prepares environmental impact statements and has responsibility for the Wild and Scenic Rivers Program.

Duties of the *Scenic Rivers Program* include (1) preparing management plans for each of the nine designated rivers, (2) reviewing permit applications relating to the use and development of the water and related land resources of scenic rivers, and (3) inventorying all other rivers in the State for possible inclusion in the system.

The Wild and Scenic Rivers Act requires approval from the Secretary of the Department of Natural Resources for the construction and operation of dams, channels and other structures impeding the natural flow of scenic and wild rivers. NR § 8-401-410 (1974). The Youghiogheny is the only wild or scenic river for which the State has authority to formulate land use regulations.

The State Boat Act gives the Department of Natural

Resources the authority to regulate boating activities on the waters of the State. Regulations include boating safety and noise limits for pleasure crafts. A boat tax, levied on all motorized watercraft, supports many waterway improvement operations. NR § 8-701-727 (1974).

The **Maryland Environmental Service** prepares five year plans for water supply, wastewater purification, and solid waste disposal projects for designated river basins. These plans are then submitted for review and comment to the County, all persons responsible for water supply or waste disposal and the secretaries of the Department of Natural Resources, State Planning, and the Department of Health and Mental Hygiene.

Maryland Environmental Trust was established to protect and conserve the scenic, cultural, and aesthetic qualities of the environment. Its functions include establishing research and educational programs and acquiring land that is important to the general welfare of citizens of the State through gifts and purchase.

Maryland Geological Survey gathers information on the character of the State's geology, mineral and water resources. It also carries into effect plans for development of the waterfront property of the State and supervises provisions relating to the Bureau of Mines.

The Division of Archaeology protects and encourages the preservation of prehistoric and historic sites on privately owned land in the State. A permit must be issued before any excavation or appropriation can take place, and the Maryland Geological Survey may issue regulations for the preservation of archaeological sites.

The **Maryland Wildlife Administration** is in charge of the conservation and management of the wildlife of the State. Duties include regulating hunting, managing State-owned land as wildlife and waterfowl habitats, and conducting wildlife research in order to meet the demands of wildlife-oriented recre-

ation and insure the continued survival of all wildlife species in the State.

Migratory Bird Law: Except for unprotected birds and game birds hunted during an open season, no person may hunt, destroy, or possess a wild bird, whether killed in Maryland or elsewhere. NR § 10-601-623 (1974).

Non-game and Endangered Species Conservation Act: The Secretary of the Department of Natural Resources is instructed to conduct research, purchase land, and use other authorities for protecting non-game and endangered wildlife species. NR § 4-210, 10-210 (1974).

Wildlife Management Areas: The Department of Natural Resources can acquire areas suitable for the protection and propagation of wildlife, and can establish management areas on existing State-owned lands. It also offers assistance to private and institutional land owners in the application of scientific wildlife management techniques on request. NR § 10-801-808 (1974).

The **Maryland Fisheries Administration (MFA)** has the function of managing fish, fisheries, and aquatic life within the State. The MFA has regulations pertaining to the taking of commercial and sport fish and shellfish from the State's waters. Other laws include the Endangered Species of Fish Conservation Act. In addition, State funding helps support research on fish diseases and pollutants.

Cold Water Fisheries Program conducts surveys and inventories of all natural trout areas as well as surveys and inventories of existing and potential special regulated trout streams. Under regulations developed by the MFA Special Trout Management Areas have been designated throughout the State. NR § 4-602 (1974).

A special Catch and Return Area has been designated in Deer Creek in Harford County from a sign approximately ¾ mile upstream from Eden Mill Dam to the Green Road Crossing. Trout caught within this area must be returned to the stream. One trout over 15 inches long may be kept per day.

An *Angler's license* is required for any person, 16 years of age or over, who fishes in the nontidal waters of the state. The license only entitles the fisherman to fish during the open season. Exemptions from this requirement are listed in the Natural Resources Article § 4-604. NR § 4-604 (1974).

A *Trout Stamp* is required in addition to an angler's license for anyone 16 years of age or over to fish in a designated Trout Stream of the State. NR § 4-614 (1974).

Warmwater Fisheries Program is responsible for the stocking and management of inland fishery resources in all streams, rivers, ponds, lakes and canals, publicly or privately owned, extending to the tidal boundaries, designated by law.

The **Maryland Forest Service (MFS)** manages State-owned forests and encourages the sound management of privately owned forests.

Woodland Conservation Areas: Private landowners may contract with the Department of Natural Resources to have their land placed within the forest conservation and management program. The tax assessment valuation of their land may not be increased during this contractual period, as long as the landowner abides by the guidelines of the program designed to best manage the forest areas and protect watersheds. NR § 5-301-308 (1974).

Forest Conservancy Districts: The State has been divided into forest districts with a forestry board appointed by the Department of Natural Resources. Their purposes are to make expertise available to landowners, promote good forestry practices, and aid in watershed management. They develop comprehensive forest management plans and enforce the Department of Natural Resources' rules and regulations. They adopt new rules and safeguards of the forestry boards to aid private forest owners. NR § 5-601-609 (1974).

The *Roadside Tree Program* is a departmental program to plant roadside trees, provide for their care, and develop nurseries for their propagation. A permit is necessary from the department before anyone can cut or trim a roadside tree. NR § 5-401-411 (1974).

The **Maryland Park Service (MPS)** manages State-owned parks, scenic preserves, natural areas, and historic monuments. Specially trained park service employees are responsible for all facets of park maintenance and law enforcement in these areas.

The **Natural Resources Police** includes Marine and Inland Divisions, and is responsible for enforcement of the State Boat Act on both tidal and non-tidal waters.

Licensing and Consumer Services helps support other units of the Department of Natural Resources. It is responsible for titling and registering boats, issuing hunting, sport, and commercial fishing licenses and collecting taxes.

Interstate Compacts and Commissions were formed by special agreements with other States to preserve optimal quality of the Chesapeake Bay. The Secretary of the Department of Natural Resources is also authorized to enter into agreement with other States to coordinate fisheries management programs.

The *Susquehanna River Basin Compact* was formed to "conserve, utilize, develop, manage, and control the water resources of the Susquehanna River Basin under comprehensive, multiple purpose planning . . ." The Commission's powers include the approval or disapproval of projects which cross State boundaries, which involve the diversion of water or have impact on another State. NR § 8-301 (1974).

DEPARTMENT OF STATE PLANNING

Department of State Planning functions as an "advisory, consultative and coordinative" agency in planning matters. It prepares and updates a State development plan and a Comprehensive Outdoor Recreation Plan. In addition, it prepares the State's capital program and annual capital budget. This Department has many Clearinghouse functions, including review of all Federal and State grants, and review of any transfers of land within the State. It is also a storehouse for geographical information on population growth, land use, public facilities and natural resources.

The **State Land Use Act of 1974** gives this Department authority to participate in decisions concerning land use in Maryland, but does not convey any regulatory responsibilities or veto power to the Department. Critical Areas and an Intervention Program are two duties mandated by this act. 88c Ann. Code Md. § 1,2 (1969, Supp.).

Critical Areas Program

Critical Areas are areas of importance, either for future use or development, to the citizens of the State. Critical Areas are divided into three general categories: areas suitable for preservation, conservation, and utilization.

The Critical Areas Program is responsible for identifying and designating areas of critical concern to the State. This program is concerned solely with land use and, as a result, each critical area can be geographically located and delineated on a map. Taking the character of an area into consideration, appropriate land use management techniques are developed for each Critical Area to insure the proper use of the land.

Intervention Program: The Department of State Planning has the power to intervene in any Maryland Administrative, judicial, or other proceedings concerning land use, development, or construction which involve activity of more than just local impact.

DEPARTMENT OF HEALTH AND MENTAL HYGIENE

Responsibilities of this department include air and noise regulations and overseeing county plans for water supply and sewage treatment systems. Under Article 43 § 387C, all counties must develop water and sewage plans which are consistent with county land use plans and State water quality standards.



DEPARTMENT OF ECONOMIC AND COMMUNITY DEVELOPMENT

The Department of Economic and Community Development has the major role of establishing the State Economic Development Plan. The three major divisions of the Department are concerned with Industry, Housing, and Culture. Some of their activities which are listed below, determine land use in the State.

Maryland Industrial Land Act has the purpose of identifying potential sites for industrial use and preserving them for future use. In accordance to zoning and other regulations, loans are available for the acquisition of industrial land. 41 Ann. Code Md. § 439 (1971, Supp.).

Industrial Buildings for Counties and Municipalities Act sets up a program of local acquisition of industrial lands and buildings for economic benefit. 41 Ann. Code Md. § 266J-266cc (1971).

Maryland Historical Trust preserves and maintains historical, aesthetic, and cultural properties, buildings, and fixtures pertaining to Maryland's early history. The Trust has funding and can establish historical zoning districts for this purpose. 41 Ann. Code Md. § 181A-181X (1971).

THE DEPARTMENT OF TRANSPORTATION

Within this Department, the State Highway Administration (SHA) is responsible for constructing the State's primary road system and extensive long-range highway planning. All SHA constructions still require grading and sediment control approval from WRA along with other permits for streambed alteration, bridge work or wetlands alterations.

THE DEPARTMENT OF AGRICULTURE

The Department of Agriculture has the supervision, direction, and control of the provisions of the agricultural laws, and all matters relating to fostering, protecting, and developing the agricultural interest of the State.

Pesticide Regulation: The Secretary of Agriculture has the authority to implement pesticide regulations, remove from sale any dangerous pesticide, license pesticide applicators, and establish standards for use, storage, and transfer of pesticides. The Department of Agriculture also participates in implementation of the *Hazardous Substances Act* and is represented on the *Hazardous Substances Disposal Advisory Council*. AG § 5-204 (1974).

Agricultural Land Preservation Foundation was established to preserve agricultural land and woodland in order to provide sources of agricultural products within the State, control urban expansion, and protect agricultural land and woodland as open-space land. The Foundation presently can acquire agricultural land and easements donations. AG § 2-501-515 (1974).

State Soil Conservation Committee: This organization is responsible for the dissemination of funds and recommendations of policy to local Soil Conservation Districts.

Other Maryland Laws

In addition to the different State agencies and legislation and regulations defining their duties, certain other State laws apply to rivers in a general way. The following laws address the responsibilities of counties, agencies within the State government, and the rights of individuals.

Act of Maryland Environmental Policy: All State agencies are required to prepare an environmental effects report on each proposed state action that could significantly affect the quality of the environment. This report includes the environmental effects of the proposed action, measures which might be taken to minimize adverse effects and maximize beneficial effects, reasonable alternatives to the plan, comments by other state, public or private entities with jurisdiction by law, and special expertise or recognized interest by the legislature. NR § 1-301-303 (1974).

Common Law. Common Law is a system of law which differs from written statute laws, since it is declared in court decisions by judges and is based on

general customs and on reason and fixed principles of justice. Regulations formulated by the State's Police Power, the right of Eminent Domain and Riparian rights are all part of Maryland's Common Law which affects the use and ownership of rivers and related lands.

Police Power is a State's sovereign power over persons and property which enables the society to prohibit or regulate all things detrimental to its comfort, safety, health and welfare. Included in these powers are the powers to tax, to condemn land and to regulate land use. Decisions in Maryland's courts regard environmental conservation laws as being formulated by the State's police power, because they are preventing public harm.

Eminent Domain is the right of a government to take private property for public use upon making just compensation, ascertained according to law.

Riparian Rights are rights of owners of land on the banks of a river, or land bordering any stream, lake or tidewater. These rights have been determined by court decisions. Some of Maryland's riparian doctrine pertaining to non-tidal streams is summarized as follows.

Rights to water — All riparian owners along a stream have equal right to the use of water from the stream. They share equally during times of plenty and in times of scarcity.

Use of water — The use of water by riparians for domestic purposes has a preference over other uses. For all other uses, such as industrial and agricultural, each riparian has the right to make a "reasonable" use of water. (Whether or not a particular use is reasonable depends on the facts of each particular case).

Loss of rights — There are several ways by which riparian rights can be lost. These include voluntary agreements, condemnation or use of the power of eminent domain, and various other situations where courts deem it an injustice to permit a party to assert riparian rights.



INDEX TO HARFORD COUNTY AUTHORITIES

Ordinance: A local law or regulation enacted by a city council or other similar body under powers delegated to it by the state.

Zoning Regulations. The unincorporated territory of Harford County, Maryland, is divided into ten zoning districts. Two of the districts are located within or adjacent to the Deer Creek Scenic River District.

"A-1" Agricultural District: Uses permitted in this district include agriculture, agricultural buildings, agricultural structures, farm offices, commercial and non-commercial greenhouses and nurseries, and buildings or feeding pens for farm animals. In addition, single family dwellings on individual lots of one to two acres for each full ten acres of a larger parcel may be subdivided according to the provisions of the zoning ordinance. Exceptions for conditional uses may also be granted in the agricultural district.

"R-1" Suburban Residential District: Uses include single family dwellings, churches and parishes, schools and colleges, public buildings and properties for cultural, administrative, or public service uses; public parks, playgrounds, community centers, non-commercial greenhouses, utility lines, and alterations of existing dwellings to accommodate two families provided the owner is a resident therein. Lot sizes and building heights are specified in the ordinance.

Subdivision Regulations: Proposed subdivision layouts must conform to the Harford County master plan and all existing zoning ordinances. Detailed plans shall be submitted to the County for approval before any construction begins. Subdivision approval is not granted for lands subject to periodic flooding, but may be conditionally granted in areas of poor drainage or poor physical condition. Allocation of areas suitable for playgrounds, playfields, schools, and parks is encouraged.

Private Waste Disposal Systems: Private waste disposal systems must be approved with respect to

location, system type, and test procedures by the Health Officer of Harford County or an appointed representative before construction begins. No permit is offered for private systems in 100-year floodplain areas, on slopes over 20% grade, on unsettled filled ground, or where there is an existing public sanitary sewer.

Sediment Control Ordinance: The Sediment control ordinance requires that a permit be obtained from the County Department of Public Works for any major land-disturbing activity. Permits are not required for normal agricultural practices, private septic systems, authorized Harford County Public Works projects, or grading and trenching for utility installations as long as adequate sediment control measures are used. Special restrictions are imposed for the preservation of state wetlands.

Flood Hazard Control Bill: The Flood Hazard Control Bill restricts development and use of lands in the 100-year floodplain and provides for the eventual removal of non-conforming uses. Agriculture is one of the principal uses which are permitted within the 100-year floodplain. Others are recreation, lawns and gardens, approved public utilities, and such commercial uses as parking, runways, or loading areas. Conditional uses, listed in the ordinance, are permitted only upon application to the Harford County Department of Public Works.

Harford County Soil Conservation District (SCD) is a non-profit organization responsible for the conservation of natural resources in the county. The District occupies the same boundaries as Harford County. It is managed by a five-member Board Supervisors, four of whom are appointed by the State Soil Conservation Committee and one by the County Government. Technical assistance is provided to the District by the USDA Soil Conservation Service.

On a voluntary basis, the District assists landowners in applying conservation practices to the land. The District also approves plans for clearing, grading, and other activities disturbing soil. Duties of the District include designing long-range conservation programs for the County and participating in non-point source pollution studies pursuant to Section 208 of the federal Water Pollution Control Act of 1972.

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Footnotes

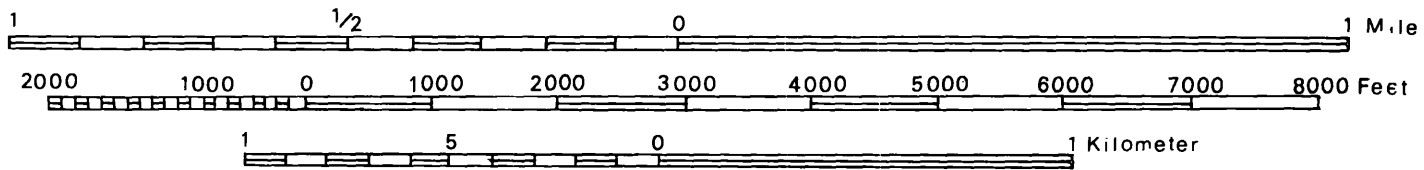
1. The method of classifying Riverscapes by river type and landscape was developed by planners at the Bennington County Planning Commission and first appeared in a publication of the state of Vermont entitled "The Vermont River: Heritage and Promise", November 1975.
2. This caption and the accompanying description first appeared in publication cited above.
3. Ibid.
4. Ibid.
5. personal communication. Mr. Nikodemus. Harford County Department of Parks and Recreation.
6. personal communication. Mr. Frisbee, Maryland Fisheries Administration, Department of Natural Resources.
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8. MAGI System, 1973 Land Use Map of Maryland. Department of State Planning.
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Production Notes

Photographs (unless noted) are by DNR staff. Technical drawings on pages 12, 18, 36, 37 are adapted from those of Marianne Orlando in *Vermont River*. Typography is Souvenir Light and Souvenir Demi supplied by Fishergate Publishing Company of Annapolis. Printed by E. John Schmitz & Sons, Inc. of Baltimore, 1979.



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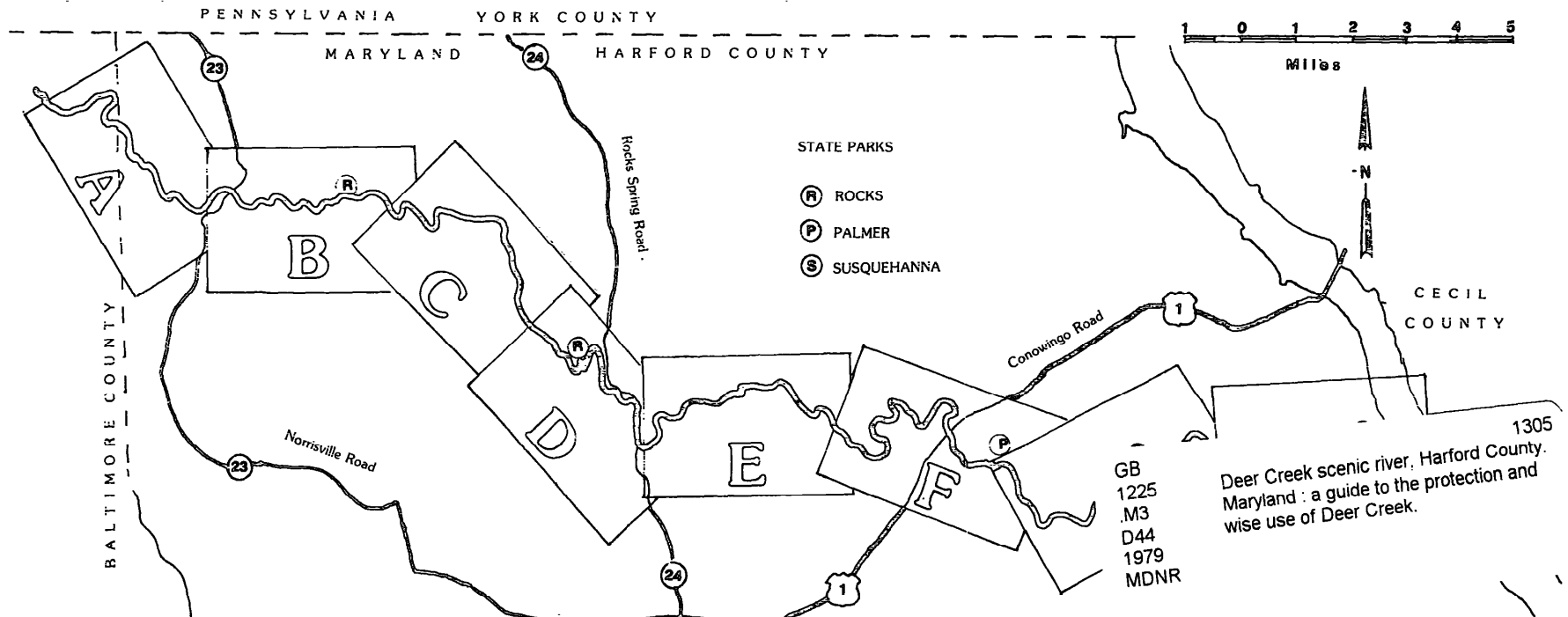


DEER CREEK Scenic River, 1978

Baltimore County Line to the Susquehanna River
in Eight Aerial Photographic Map Sections

- A - West Liberty Road to Ivory Mill
- B - Norrisville Road to Hidden Valley Camp
- C - Hidden Valley Camp to Holy Cross Road
- D - North Harford to Deer View Court

- E - Creekview Court to Ady Road
- F - Ady Road to Palmer State Park
- G - Palmer State Park to Glenville Road
- H - Wilson Mill to Susquehanna River





STATE OF MARYLAND
DEPARTMENT OF NATURAL RESOURCES
CAPITAL PROGRAMS ADMINISTRATION
LAND PLANNING SERVICES

WILD AND SCENIC RIVERS PROGRAM
1979



HARFORD COUNTY
BALTIMORE COUNTY

COUNTY LINE

DEER CREEK
TRAYN SMITH

HOLLIDAY HILLS

PARKER COUNTY PARK

JOLLY ACRES CAMP

CAMP SWIFTWATER

IVORY MILL

Norrisville Road

Trout Catch and Return Area, West Limit

West Liberty Road

0 1/4 1/2 MILES



DEER CREEK Scenic River
Harford County, Maryland 1978



West Liberty Road to Ivory Mill

23



23

Amos Mill — 1/4 mile

B. G. & E. TRANSMISSION LINE

INDIAN HILLS

Deer

Amos Road

Creek

IVORY MILL

ROCKS STATE PARK

HIDDEN VALLEY CAMP

MADONNA LANDFILL

0 1/4 1/2 MILES



DEER CREEK Scenic River
Harford County, Maryland 1978

B Norrisville Road to Hidden Valley Camp



TRANSMISSION LINE

Big Branch

Eden Mill Road

EDEN MILL COUNTY PARK

Trout Catch-and-Return Area, East Limit *

EDEN HILLS

Jenys Road

Deer Creek

Federal Hill Road

Deer Creek

Holy Cross Road

Rock Hollow Branch

EDEN VALLEY CAMP

Madonna Landfill

0 1/4 1/2 MILES

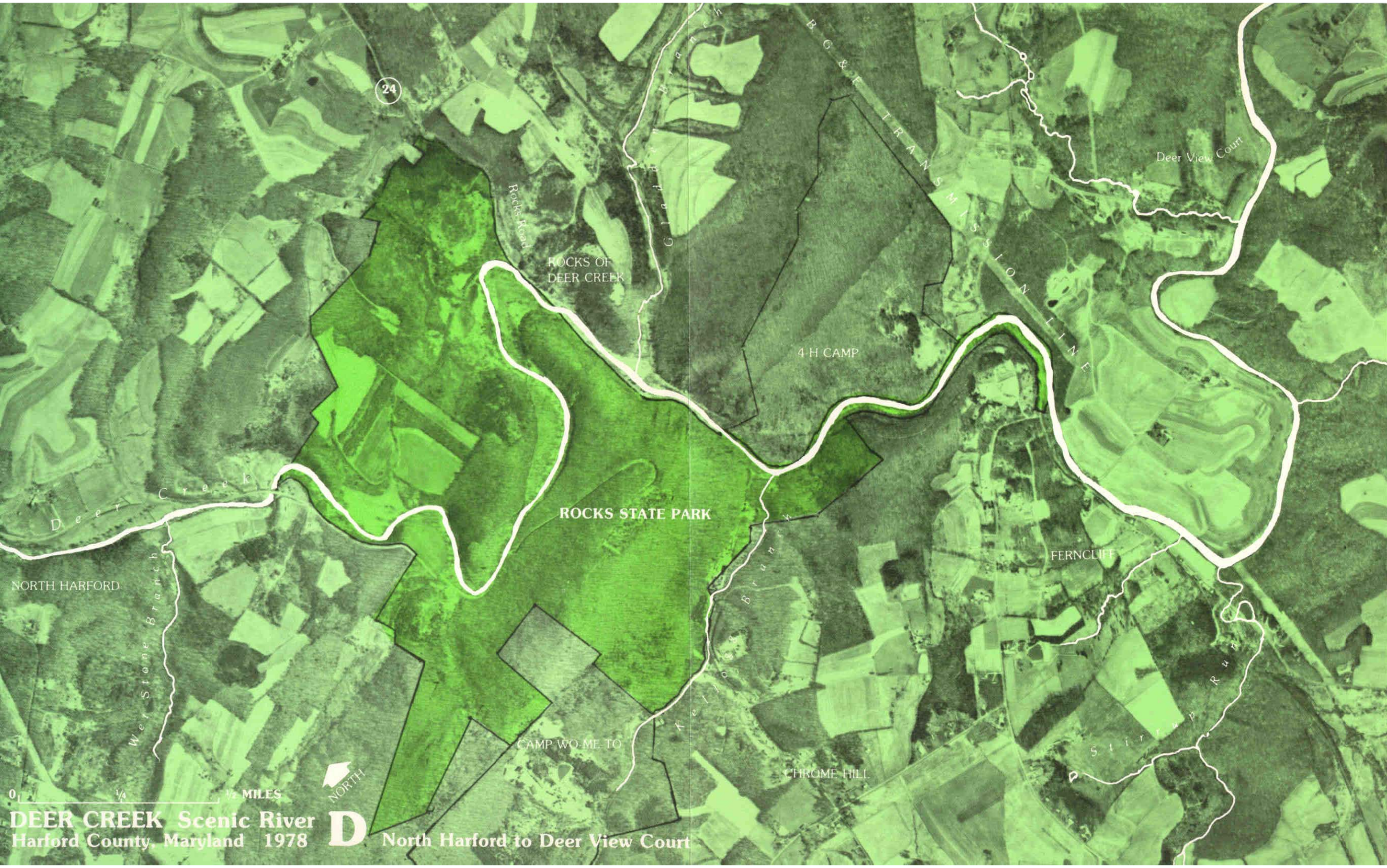


165

DEER CREEK Scenic River
Harford County, Maryland 1978



Hidden Valley Camp to Holy Cross Road



24

Rocks Point

ROCKS OF DEER CREEK

4 H CAMP

ROCKS STATE PARK

FERNCLIFF

CAMP WO ME TO

CHROME HILL

Deer View Court

Deer Creek

NORTH HARFORD

West Stone Branch

Clarks Branch

Apple Branch

B & E TRANSMISSION LINE

Stirrup Run

0 1/4 1/2 MILES



DEER CREEK Scenic River Harford County, Maryland 1978

D North Harford to Deer View Court



Deer Creek

Creekview Court

Clark Bridge

Grier Nursery Road

Walters Mill Road

DELANO ACRES

SHAWNEE

WALTERS MILL

Ady Road

Stouibottle Branch

Stouibottle Branch

543

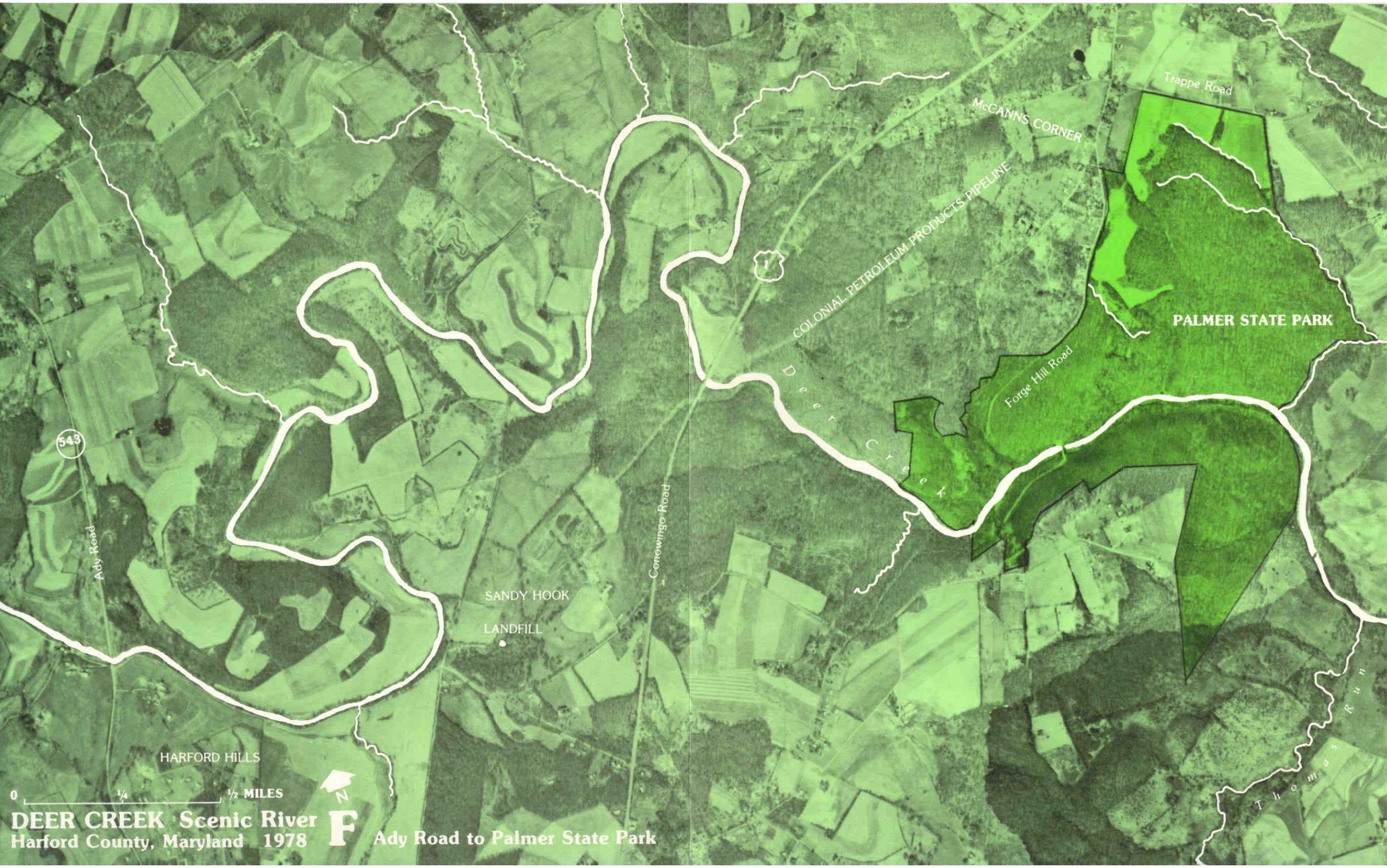
0 1/4 1/2 MILES



E

DEER CREEK Scenic River Harford County, Maryland 1978

Creekview Court to Ady Road



543

Ady Road

HARFORD HILLS

SANDY HOOK
LANDFILL

Conowingo Road



COLONIAL PETROLEUM PRODUCTS PIPELINE

Forge Hill Road

MCCANN'S CORNER

Trappe Road

PALMER STATE PARK

THOMAS RUN

0 1/4 1/2 MILES



DEER CREEK Scenic River
Harford County, Maryland 1978



Ady Road to Palmer State Park



PALMER

STATE PARK

SUGAR HILL

Hopkins Branch

Branch

Hollands Branch

136

Priest Ford Road

NOBLES MILL

MOUNTAIN HILL

Deer Creek

ABERDEEN TANK PROVING GROUND

U.S. ARMY

Cool Branch

Mill Brook

SCHOOLHOUSE HILL

Graveyard Creek

GLENVILLE

Glenville Road

0 1/4 1/2 MILES



DEER CREEK Scenic River
Harford County, Maryland 1978



Palmer State Park to Glenville Road



161

WILSON MILL

U.S. Army Pumping Station

Darlington Road

HARMONY

Deer Creek

Baltimore City Pumping Station

Stafford Bridge

SUSQUEHANNA STATE PARK

Craigs Corner Road

Stafford Road

Buck Branch

Lower Branch

Stafford Power Company R.R.

Susquehanna River

ROCK RUN MILL

0 1/4 1/2 MILES



DEER CREEK Scenic River
Harford County, Maryland 1978 **H** Wilson Mill to Susquehanna River