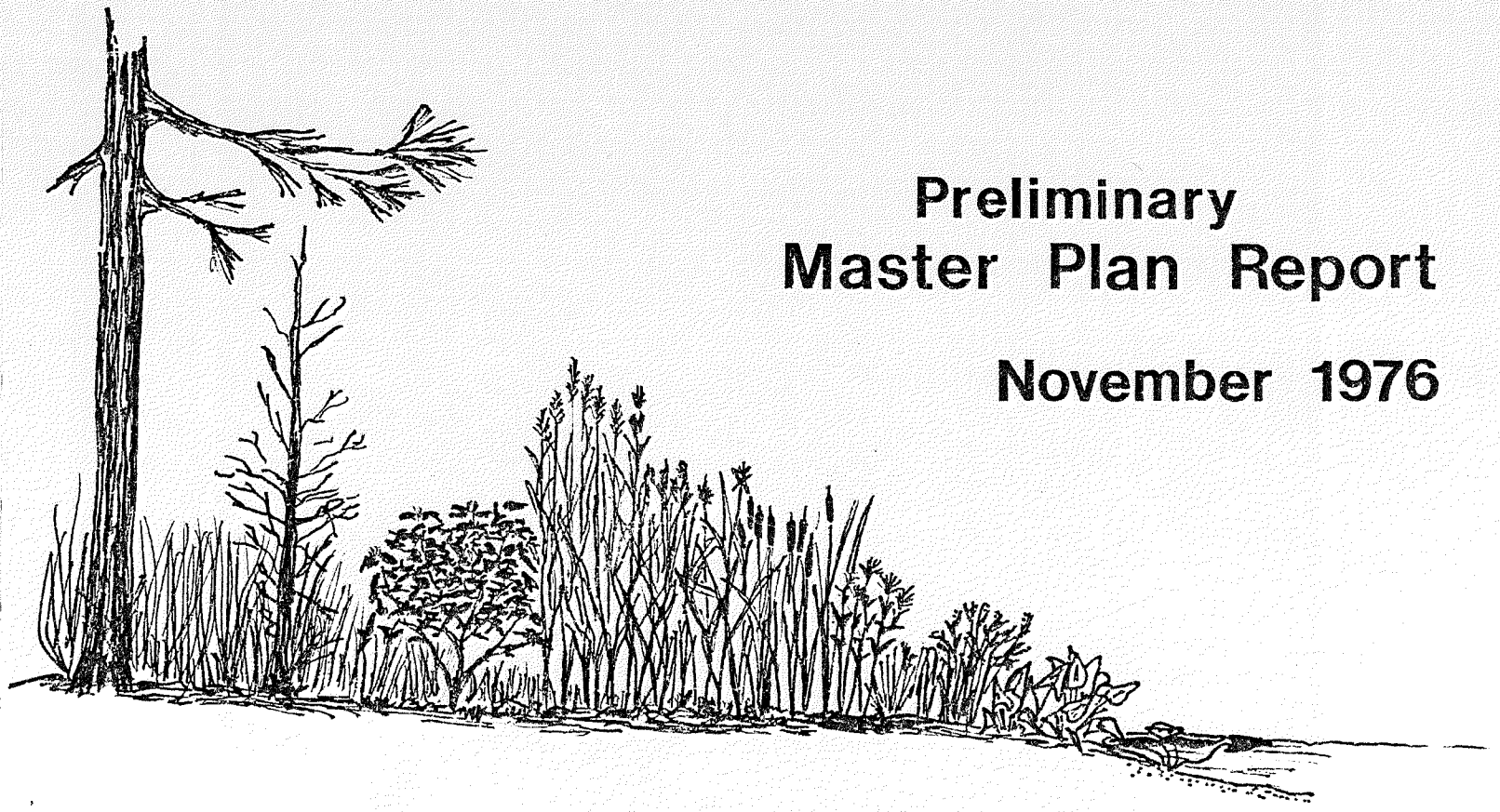
Don Ledeen

HUNTLEY MEADOWS PARK



Preliminary Master Plan Report

November 1976

HUNTLEY MEADOWS PARK

Preliminary Master Plan Report
November 1976

Prepared for: Fairfax County Park Authority Board

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HUNTLEY MEADOWS PARK

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HUNTLEY MEADOWS PARK

LOCATION

Huntley Meadows Park is located in the Lee Magisterial District, Fairfax County, Virginia, south of Kings Highway and north and west of Richmond Highway (Rt. 1). It is bounded on the north by Stoneybrook Subdivision and Lafayette Village Apartments, on the east by Hybla Valley Subdivision, on the south by Mt. Vernon Woods, Mt. Vernon Valley, Pinewood Lake, and Fairfield Subdivisions, and on the west by Hayfield and Wickford Subdivisions and a U.S. Coast Guard Station.

AREA DESCRIPTION

Huntley Meadows Park encompasses an area of 1,262 acres. There is very little development on the site, having previously served as a Navy installation. A small maintenance facility is located on the north leg of the park. Approximately 85% of the site is wooded with two sewer easements crossing the park. At the present time, there is no vehicle access to the park. The primary "walk-in" access is off S. Kings Highway near its intersection with Telegraph Road. Hiking/biking access can also be made from most of the park's perimeter.

SITE HISTORY

In 1772, the Huntley Meadows tract was acquired by the George Mason family and remained within the Mason family possession until prior to the Civil War. More recent times have seen the site proposed as a terminal point for airships (ending in the 1930's with the Hindenberg disaster) and ownership by the Federal Government. Partial use of the site (north, east, and southern perimeter) was obtained by agreement between the U.S. Department of the Navy and the Fairfax County Park Authority in July 1971, and was referenced as "Hybla Valley Trails". The remainder of the site was later declared surplus and was acquired by the FCPA in 1974 under the "Legacy of Parks" program. As a part of such acquisition, a conceptual plan was prepared by the FCPA which showed minimal development of the park, maintaining its natural state.

Since November 1974, the Conservation Division of the FCPA has been charged with the responsibility of conducting basic field research on the site to determine existing biological conditions. (See Baseline Environmental Study, December 1975, Appendix A.)

The Park was so named as a result of a "Name Your Park" contest which concluded in March of 1975. Huntley Meadows received its official dedication and was opened to the public on April 26, 1975.

A Preservation Study for Huntley was prepared by Glave, Newman and Anderson and Associates in March, 1976 (See Appendix D). This report pinpoints the importance of the Huntley House, its environment and its relationship to the park.

On February 24, 1976, a preliminary public hearing was held, at which time the FCPA received citizen input and concern for the park's master plan for development purposes.

SOILS, SLOPES AND HYDROLOGY

A complete soil map is presently being prepared by the County Soil Scientist. Soils throughout the park are generally regarded as either poor or marginal for septic and road use and slippage-prone swelling clays underlie most of the area. The southern half of the park is almost 100% Othello soil. This soil has a water table at the surface or 3 - 4 inches of water standing on the surface during wet seasons. It is unsuitable for building sites or parking areas and would have to be built up for any type of trails.

The northern half of the park varies in its soil suitability towards development. A portion of the site was tested approximately 500' each side of the existing asphalt road (lower portion). It reveals that 68% of the area contains Woodstown soil which has a water table 14" to 24" below the surface. It would rate marginal for building support and parking areas. 30% of the area reveals Othello soil which, as previously mentioned, is considered unsuitable for development. The remaining 2% is Bertie soil, In this case, the water table is 8" below the surface during wet seasons and rates poor for development. Any trails crossing this soil should be built up to get above the water table.

A second portion of the site was tested which contained 82.0 acres in the north-eastern corner of the site, off Lockheed Boulevard and Harrison Lane. 41% of the area is Woodstown soil. 6% of the area is Bertie soil. 48% of the area is Othello. (See previous descriptions.) The remaining 5% of the area is Dragston soil and loose fill material. Both are considered poor for development.

At present, there is no available soil information on the north central portion of the park and the northern most branch of the property (off S. Kings Highway). These areas have been scheduled for completion by the Co. Soil Scientist by Dec. 1976. With the compilation of other analysis material, it is fairly safe to say that the northernmost branch of the park can be considered suitable for development whereas the north central portion of the park, which is split by a branch of Barnyard Run, can be considered as poor and unsuitable for development.

Approximately 80% of the site is relatively flat with slopes less than 2% in most areas. About 5% of the site (northern sector) contains slopes from 5% to 15%.

There are two primary drainage channels on the site - Dogue Creek (including Barnyard Run) and Little Hunting Creek - both of which drain into the Potomac River. Drainage is, however, quite poor with channels poorly defined and the southern half of the site retaining surface water 3/4 of the year.

WILDLIFE AND VEGETATION (See Baseline Environmental Study - Dec. 1975)

Field surveys have produced 272 species of plants, representing 78 of the 168 plant families recognized as being capable of growing in this area. These include trees, shrubs, lichens, and mosses.

Wildlife surveys have produced 60+ species of birds, 36 species of mammals, 30+ species of reptiles, 20+ species of amphibians, and 25 species of aquatic organizms. Numerous varieties of wildlife, vegetation and habitats make the park area unique and valuable as a natural area.

ADJACENT RECREATIONAL FACILITIES (Enclosure I)

There are approximately 40 elementary, intermediate and high schools within a

three mile radius of Huntley Meadows Park which include approximately 87 ballfields, 70+ basketball courts, 40+ football and/or soccer fields, 50 tennis courts, 9 tracks, and 40+ apparatus areas. (Dept. of Recreation Survey, Oct. 1976.)

There are approximately 30 parks (FCPA) within a three mile radius including 14 ballfields, 3 football/soccer fields, 11 multi-use courts, 17 apparatus areas, 11 tot lots, 26 tennis courts, 13 picnic areas, 1 community center, 1 swimming pool, and one handball court.

Private facilities include 44 swimming pools, 34 tennis courts, and 3 golf courses. National Park Service operates Fort Hunt Park and the George Washington Memorial Parkway.

HISTORICAL SIGNIFICANCE (History Division)

Huntley Meadows is a source for the Little Hunting Creek and Dogue Creek. On both streams the complete development of a water shed can be illustrated. The series of ecological events along the trails would be integrated with the historic events provided by the houses to create trails of unique quality and character.

The full development of the trail system would require acquiring right of ways or easements across Ft. Belvoir and several private properties. This does not seem to be an insurmountable problem.

In 1871, a writer in the Syracuse Journal described Huntley, "The House stands boldly on a hill spur, looking over broad acres of corn, rye, wheat, oats, and fertile meadows ... a sight to see". Huntley Meadows Park in the major portion of these fields, is now covered with trees and marsh areas rather than fields.

The physical and historic relationships between Huntley Meadows Park and Huntley suggests that Huntley is well suited for use as an orientation and interpretation area for the park.

Huntley Meadows Park, containing 1,262 acres is of low topography profile having only a twenty foot change in elevation distributed over 5,000 feet. Although

lacking many visible distinguishing features, the area is unique in Fairfax County for its diversity in wildlife and wildlife habitat. Barnyard Run, Dogue Creek, and Little Hunting Creek pass adjacent to or through the park. It is difficult to trace the origins of Little Hunting Creek and Barnyard Run due to physical alterations of the drainage patterns by previous owners, but they appear to have their origins in the Huntley property in the dairy and spring house, respectively.

Huntley Meadows Park was originally part of the vast Mason properties in the County. It was described as a "wild fertile valley with little timber" in 1862. The valley was formed by a former meander of the Potomac River. Huntley Meadows was selected as the site of the George Washington Air Junction in 1916-1917. During its years of use as an airport, the natural drainage of the site was considerably altered; and the site became reforested.

Huntley Plantation was originally cultivated by slaves. After the Civil War it became a family farm owned by immigrants from the north.

The Harrisons owned Huntley for over seventy-five years. The house then became a suburban residence. Its pattern of development parallels that of the County as a whole, the transformation of the plantation into a suburban house is broadly illustrative of the County's development.

The most important feature of the property necessary for orientation to the park is the view to the Potomac from the porch of the Mansion House. This portion of Fairfax County is highly urbanized yet the view shows few of the scars, it remains similar to the view from the porch 150 years ago. Huntley is a little nineteenth century enclave in the midst of garden apartments and speculative shopping centers. On the property, one gets very little feeling of the surrounding urbanized development. The County is fortunate that it already owns much of the view, Huntley Meadows Park, an unusual circumstance.

Huntley Meadows Park is the largest park owned by the FCPA. Because of its size and lack of definition, it is a very difficult place to comprehend. Only from Huntley does it appear manageable; the only location which can provide for both a literal and figurative overview.

CITIZEN INPUT

The preliminary public hearing was held Feb. 24, 1976 by the FCPA in order that we may receive as much possible input as possible by County citizens. An additional thirty days was allowed for written responses prior to the presentation of the preliminary master plan. Listed below are the requests we have received from civic associations concerning development of Huntley Meadows Park:

1. Hayfield C.A.: Left in a natural state, bike, foot and riding trails, nature center.

2. Wickford C.A.: Left in a natural state, walking and nature trails, bridge connection from Wickford Park to the Park.

3. Hybla Valley C.A.: Left in a natural state, a few paths.

4. Virginia Hills C.A.: Same as Hayfield C.A.

5. Stoneybrook C.A.: Left in a natural state, suggests acquisition of Amlong property (Huntley House) and land and/or easements connecting it with the Park.

6. Vantage-Kingsbrooke C.A.: Left in a natural state, walking and bike paths, nature center. Opposed to any commercialism or clearing of trees. Request direct access from their community.

Individuals' responses received include:

1. Petition: From citizens of Hybla Valley Subdivision (65 total) opposed to any commercialization such as an airport, "giant slides", go carts, etc. Keep in a natural state.

2. John Fiebelkorn - Two plans for the use of parkland include: (1) 40 acres be set aside for a recreational aviation facility and (2) area be set aside for downhill recreational activities

including slip and slide concession, sled riding, soap box derby racing, etc.

3. John Davis - close to nature, no bike or riding paths, foot paths and a few drive-in parking spaces.

4. Doug Price - A weather protected music bandshell.

TRAILS

The County Comprehensive Trail Plan proposal indicates a trail around the perimeter of the park with access to and from adjacent subdivisions.

MASTER PLANNING

Huntley Meadows Park is a County Park, therefore, designed to function on a County-wide basis. The preliminary master plan represents the first attempt by the Fairfax County Park Authority to develop a comprehensive management plan for a park site which applies the ecological approach of resource management to the operations of public recreational lands. The plan encompasses the entirety of the park and all its inhabitants, including man; its purpose is to balance recreational use with resource protection to insure that man's activities are consonant with nature's restraints.

In order to realize the above stated purpose, it is recommended that Huntley Meadows Park be designated a Managed Conservation Area, based on the following premises:

1. The unique features of the site - its ecological significance, open space assets, and diversity of wildlife plus the potential for enhancing recreational benefits through natural resource management practices - are unparalleled within FCPA parklands. In addition, the site being contiguous to the land mass (open space) of Fort Belvoir, is beneficial to wildlife inhabiting the area.

2. The site was acquired by the FCPA from the Federal Government under the "Legacy of Parks" program. Acquisition was contingent upon a conceptual plan submitted to the Bureau of Outdoor Recreation on Jan. 31, 1974 which stipulated that the land would be maintained essentially "for public park or public recreational purposes".

To meet this commitment, it is suggested that the site be administered as a combined Class II - General Outdoor Recreation Area (relatively accessible to centers of urban population) and Class III - Natural Environment Area. Under these classifications, the site is characterized by "varied and interesting land forms, lakes, streams, flora and fauna within attractive natural settings". Planning and development of Class III areas should emphasize the natural environment rather than provision of man-made facilities. Typical activities may include day and weekend use for hiking, sightseeing, nature study, nature walks, picnicking, etc. "The primary objective is to provide for traditional recreation experiences in the out-of-doors, commonly in conjunction with other resource uses. Users are encouraged to enjoy the resource 'as is' in the natural environment."*

3. This Country's natural resources are currently under the greatest stresses ever imposed on them. It is reasonable to assume that the combination of increased leisure activities and expanding population will impact heavily on the natural areas of parklands. Under such conditions, it is essential that the capabilities of the resource base be the ultimate yardstick for determining the highest and best use of any area. The "Managed Conservation Area" designation best meets this requirement.

4. Input from the preliminary public hearing (February 1976) reflects a general public concensus that the park should be left in a natural state with any development directed toward passive recreational pursuits.

The Huntley Meadows Park preliminary master plan is comprised of five closely related documents. These are the Environmental Baseline Study, the Preliminary Interpretive Plan, the Preliminary Natural Resource Management Plan, A Preservation Study for Huntley, and the site analysis information presented in this report.

*Department of the Interior, Bureau of Outdoor Recreation Manual, Chapter 2, "Basic Requirements", December 1973.

1. The Baseline Environmental Study (Appendix A), prepared by the Division of Conservation in September 1975, outlines existing biological conditions and natural features including field surveys of wildlife and vegetation and (preliminary) information on soils, slopes and hydrology.

2. The Preliminary Interpretive Plan (Appendix B), is based on the recognized environmental, recreational and cultural values of the site. Interpretation serves two purposes:

   a. It increases citizen awareness of the natural world and man's relationship to that world.

   b. It assures that, through selected activities and programs, the recreational potential of the site will be realized to the fullest extent possible consistent with existing environmental constraints.

3. The Natural Resource Management Plan (Appendix C), seeks to enhance the passive recreational benefit of the site through the protection and improvement of existing habitats and increased diversification of wildlife species for non-consumptive (as opposed to hunting and fishing) use. Toward this end, recognized wildlife management techniques are proposed for the modification of forest, wetland, and open field/meadow habitat areas. In this regard, it is most important that the compatibility of, and dependence between, the interpretive and natural resource management plans be recognized. Each compliments the other and helps support a balanced program. They are not separate functions.

4. A Preservation Study for Huntley (Appendix D), rounds out the multi-faceted potential of the park site by emphasizing the cultural heritage of the surrounding region. The proposed acquisition and restoration of Huntley Mansion offers increased interpretive opportunities as well as the prospect of a physical and psychological "overview" of Huntley Meadows Park.

5. The following site anlaysis considerations play an important role in the master planning process of this park:

   a. A very high water table with about 80% of the area flooded 75% of the year.

   b. Soil restrictions in about 80% of the park - considered poor to marginal for septic, roads and trails.

   c. 80% of the site is flat with slopes less than 2% in most all areas.

   d. Requests by civic associations and citizens for walking and biking access to and from the Park.

   e. The site is located near a golf course, a district park, and numerous smaller parks which offer an abundance of active recreational activities.

With the above primary considerations in mind, the following activities are shown on the preliminary master plan:

1. Environmental center (to include visitor's center, (4600 SQ FT), environmental studies building, (3700 SQ FT), adjacent work area, picnic area, and parking for approximately 75 cars) - To be located in the northeastern corner of the site where access is favorable and development suitable to the area. (Off Lockheed Blvd. and Harrison Lane.)

2. Nature trails (approx. 2 miles) and two observation platforms (10-15 ft. high) - Connecting the environmental center with the two large meadows in the center of the park and its adjacent areas.

3. Hiking and biking trails (approx. 5-6 miles) on the parks perimeter with access to adjacent subdivisions.

4. Maintenance yard (44,000 SQ FT) - Rehabilitating the existing four small buildings located in the northern most branch of the park (with access off S. Kings Highway) as a District III Shop for the Park and adjacent Mt. Vernon area.

5. Trail easement connecting Huntley Estate with the park. Access is proposed to connect the estate on Harrison Lane with the park via the Faith Methodist Church and parcels 92-2((1))5 and 92-4((1))1 (proposed townhouse development, 76-L-079). This rezoning application, presently known as Woodstone, has been reviewed by FCPA staff and indicates a trail connection on the eastern portion of the site near Harrison Lane. Additional trail connections are in the planning process to connect the historic site with the surplus Kings Highway elementary school site to the east.

The location of the environmental center was, in large part, dependent upon the soil survey, the location of existing sewer and water lines, providing adequate access and parking, and providing 75 to 100 acres of work area. The location of the plan best suits these requirements.

Trail access is shown to and from adjacent subdivisions. It is anticipated that numerous footage of boardwalk may be required to make access connections as well as reaching wetland areas for nature study programs.

The preliminary master plan shows some picnic facilities in conjunction with the environmental center, upgrading and utilizing the existing maintenance yard as a District III Shop, and upgrading the existing asphalt roadway as a service road and fire vehicle access.

Alternative considerations were given to additional parking and the possibility of horse facilities and/or trails. (Cost estimate of parking area (20 car/trailer) $20,000 and trails - 3.7 miles @ $10,000/mile = $37,000.) Several meetings were held with people representing horse associations in the County concerning the feasibility of horse trails in the park. Due to the high water table and poor soil quality in the majority of the park, we cannot provide the minimum of 5 miles of trails they requested. It was felt by staff that we consider a different location for this activity.

Although there are transportation proposals underway to extend Lockheed Blvd., the FCPA does not recognize its extension through the parkland in its planning proposal.

COST ESTIMATE

The following estimates were made in November 1976 and reflect the preliminary master plan as it presently stands. In most cases, additional expenses were allotted for contingencies and expected difficulties in development due to the high water table.

I.	Environmental center		
	A. Entrance road - 22' wide, asphalt, curb and gutter, 1300 LF, @ $35./LF	$ 45,500	
	B. Parking area - asphalt, curb & gutter, drainage, etc., approx. 75 cars @ $800/car	$ 56,000	
	C. Visitors center (to include exhibit space, office, reference library, restrooms, storage, work area, and small auditorium/ classroom) 4,600SF @ $45./SF	$ 207,000	
	*D. Environmental studies building (to include temporary overnight facilities, small kitchen, restrooms, work areas, etc.) 3,700 SF @ $45./SF	$ 166,500	
	E. Miscellaneous (clearing and grubbing, overflow parking, picnic area, site work) LS	$ 50,000	
	Total I		$ 525,000
II.	Observation areas		
	A. Observation platform (10-15'), 2 @ $10,000/ea.	$ 20,000	
	B. Marsh and pond development, LS (approx. 20 ac.)	$ 50,000	
	Total II		$ 70,000

*It has been recommended that this be funded fully or partially by the School system.

III. Trails			
A.	Hiking/biking trails - asphalt, 6' wide (includes additional base material), 33,100LF @ $10./LF	$ 331,000	
B.	Boardwalk, 8,000 LF @ $30./LF	240,000	
C.	Nature trail, 9,200 LF @ $3./LF	$ 27,600	
D.	Bridges, LS	$ 20,000	
Total III			$ 618,600
**IV. Maintenance yard			
Total IV			$ 64,000
V.	Miscellaneous items		
A.	Upgrading existing service road (off S. Kings Highway), 12,000 SY @ $5.50/SY	$ 66,000	
B.	Signs, permits, clean-up, site work, etc. LS	$ 10,000	
Total V			$ 76,000
	Total I-V		$1,353,600
	15% Contingencies		$ 203,040
	10% Consultant Fee		$ 135,360
	TOTAL		$1,692,000

**To be upgraded by FCPA crews, in-house.

ANNUAL MAINTENANCE COSTS

The following annual maintenance costs can be anticipated for Huntley Meadows Park based on estimates by Park Operations personnel and the Productivity Report for FCPA, dated October 1975.

1.	Entrance Road and service road repairs (patching) 6,900 FT @ $.10/FT	$ 690.00
2.	Nature trails - combined average of gravel/wood chip trail, 16,500 FT @ $307/1,000 FT	$ 5,065.00
3.	Hike/bike trails (gravel), 33,100 FT @ $292/ 1,000 FT	$ 9,665.00
4.	Asphalt trails (handicapped), ½ mi. min.@$.70/FT	$ 1,848.00
5.	Parking area (approx. 75 cars)	$ 540.00
6.	Picnic area	$ 702.00
7.	Environmental area	$54,975.00
	a. Visitor center - $54,125.00 b. Environmental studies bldg. - $1,850.00*	
8.	Observation tower maint. @ $300./unit	$ 600.00
9.	Boardwalks, 8,000 FT @ $1./FT	$ 8,000.00
10.	Wayside exhibit area (3 units) @ $150/unit	$ 450.00
11.	Natural resource management	$ 6,500.00
	a. Forest management - $2,100.00 b. Meadow management - $3,200.00 c. Wetland management - $950.00	
	Total	$89,035.00

*Reflects only exterior building maintenance.

COSTS VS BENEFITS

To the extent possible, the anticipated costs of the facilities should be weighed against the benefits that the facilities might provide. While it is an easy matter to attach a quantitative value to cost, it is not so simple to do so with regard to benefits. The closest we might come to such a value is an estimate of the potential ultimate demand for, or interest in, the facilities which are recommended for Huntley Meadows Park. While this estimate is necessarily based on a number of assumptions, it can provide a measure of potential demand and use against which the costs may be evaluated.

As a County wide facility, Huntley Meadows Park would be serving a recreational resource of approximately 560,000 people, with a projected forcast of 737,000 persons by 1985. Allocated against this future number of users of this facility, the 1.7 million dollar cost of developing the park breaks down to approximately $2.31 per person. Based on an estimated minimum visitor use of 50,000 persons/year, the above costs average $1.78/visit. The maximum visitor usage would be 125,000 persons/year at a cost average of $.71/visit.

The benefits derived from these facilities far exceed the relatively inexpensive costs. Besides cost, Huntley Meadows offers a great relief to the rapid sprawl of development in Fairfax County and particularly in the Lee/Mount Vernon area. The types of managed facilities proposed also will:

1. Improve and maintain the water quality in an already sensitive area.
2. Further reinforce the quality of air by eliminating any additional pollutants.
3. Provide a habitat large enough to harbor large quantities of wildlife with minimal interference from mankind.
4. Prevent any further impact on noise levels.
5. Mental and physical improvement of human life.

In terms of the projected population which this park would serve and the additional benefits derived, the costs do not appear to be disproportionate or excessive.

PHASING PRIORITIES

It is recommended that the following order of priorities be established for the proposed improvements/development of the park:

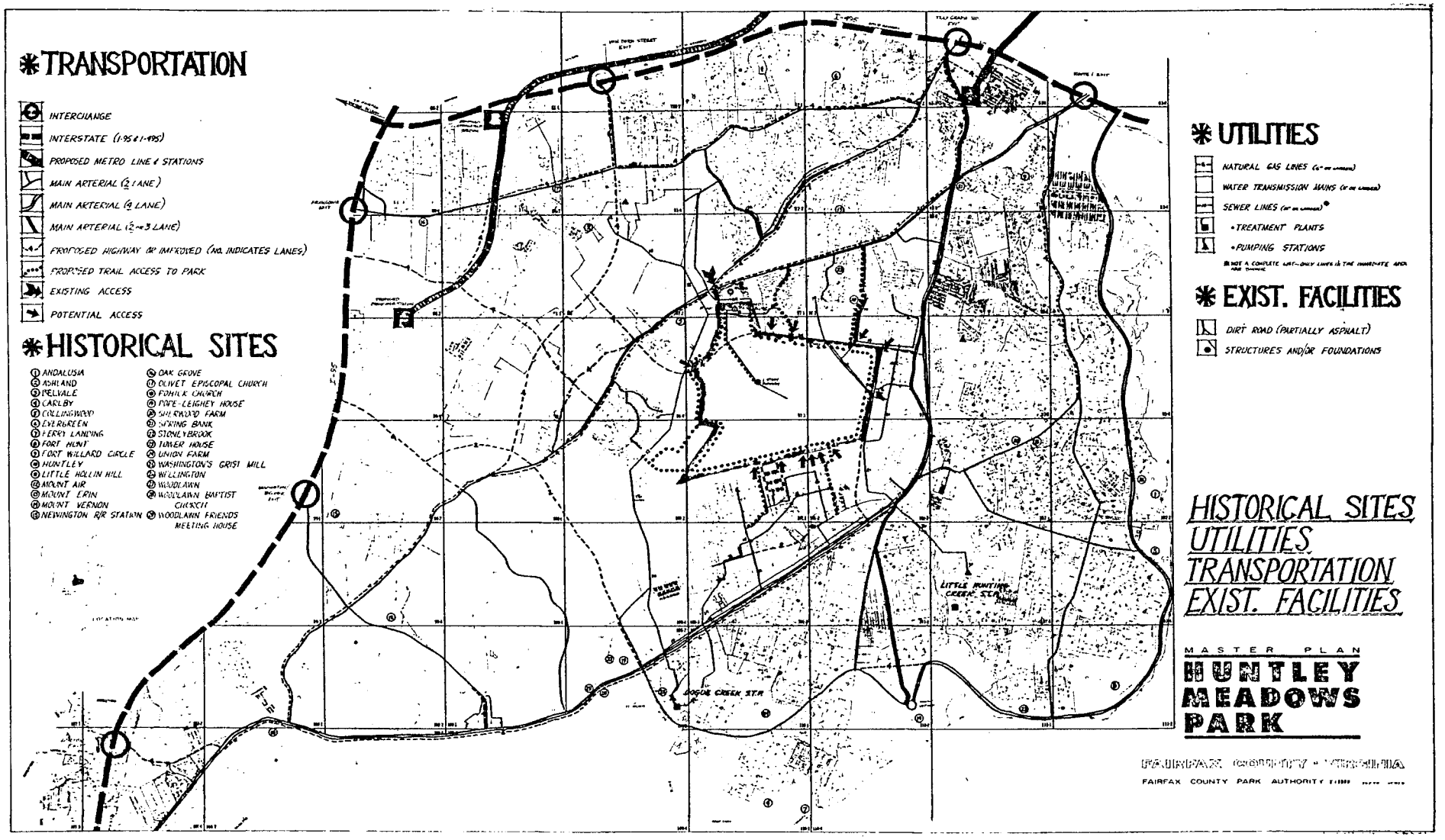
1. District III maintenance yard completion
2. Marsh and pond development
3. Nature trails and wayside exhibits
4. Hiking/biking trails
5. Visitor's center (includes access and parking)
6. Observation platforms
7. Environmental studies building
8. Upgrading of service road

With the completion of the District III maintenance shop, it is felt that the FCPA can best utilize the park by the development of the marsh and pond areas in conjunction with the nature trails. Both activities will provide additional attractions to the park visitor as well as providing the Conservation Division with a work area they can immediately utilize in conjunction with present programs. In sequence, additional trails, visitor center and the observation areas are phased in development as funds have been requested in the CIP. Until such time as final parking areas and access have been completed, the existing asphalt area near the maintenance yard could be operated for parking purposes.

The following information is from the Capital Improvement Program (CIP) 1978-82: dated July 1976.

	FY 78	FY 79	FY 80	FY 81	FY 82	Total
Huntley Meadows Development	$21,000	$253,800	$95,200	$137,600	$172,400	$680,000
Huntley Historic House (acquisition & development)	$293,000	$153,000	$290,200	$59,800	$50,000	$846,000

This breakdown works well with the phased development shown.



HISTORICAL SITES
UTILITIES
TRANSPORTATION
EXIST. FACILITIES

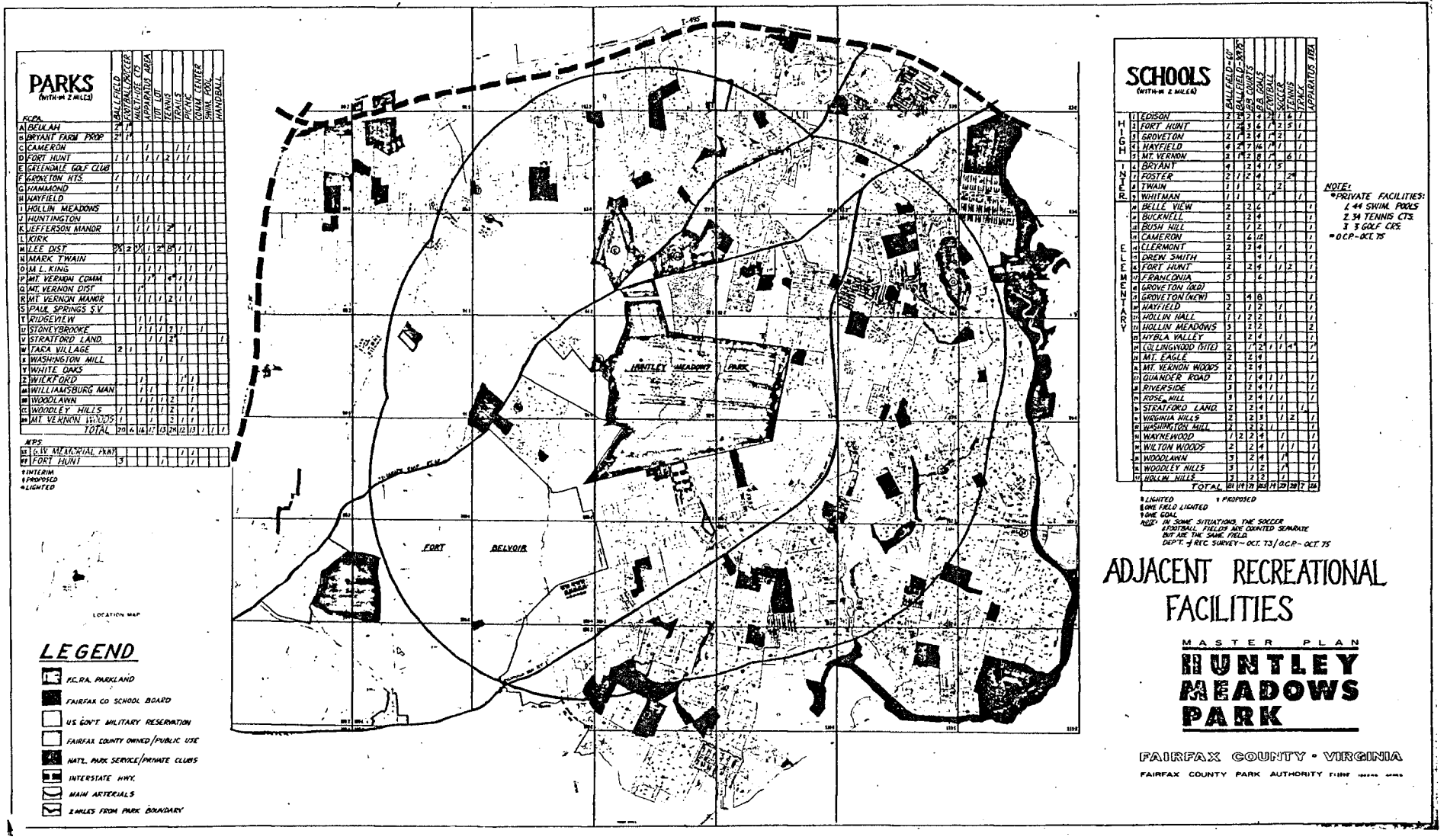
MASTER PLAN

HUNTLEY MEADOWS PARK

FAIRFAX COUNTY, VIRGINIA

FAIRFAX COUNTY PARK AUTHORITY

For updated list, see Enclosure 7; Oct. 1976



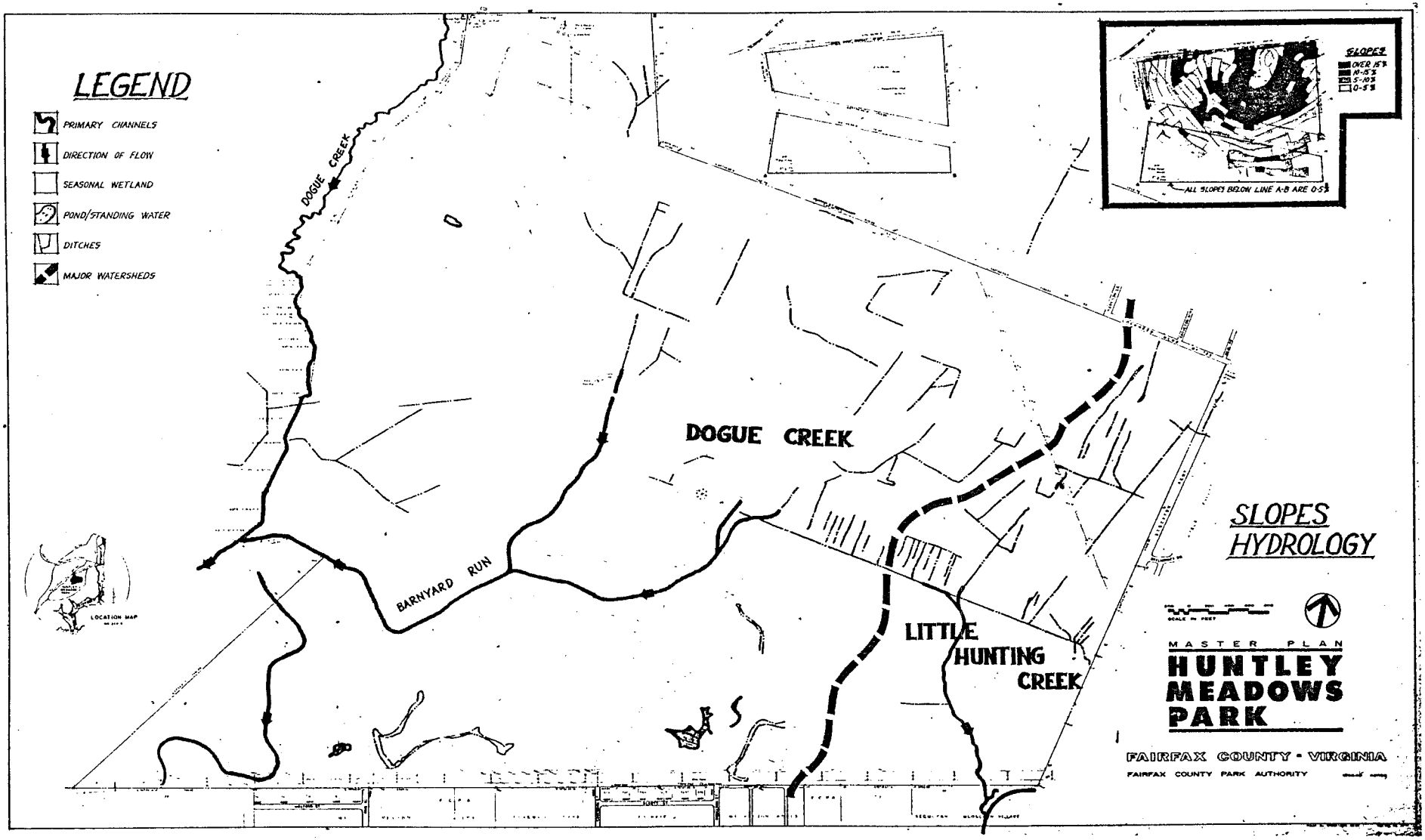
ADJACENT RECREATIONAL FACILITIES

MASTER PLAN

HUNTLEY MEADOWS PARK

FAIRFAX COUNTY • VIRGINIA

FAIRFAX COUNTY PARK AUTHORITY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LITTLE HUNTING CREEK
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15-10%
10-5%
0-5%
ALL SLOPES BELOW LINE A-B ARE 0-5%
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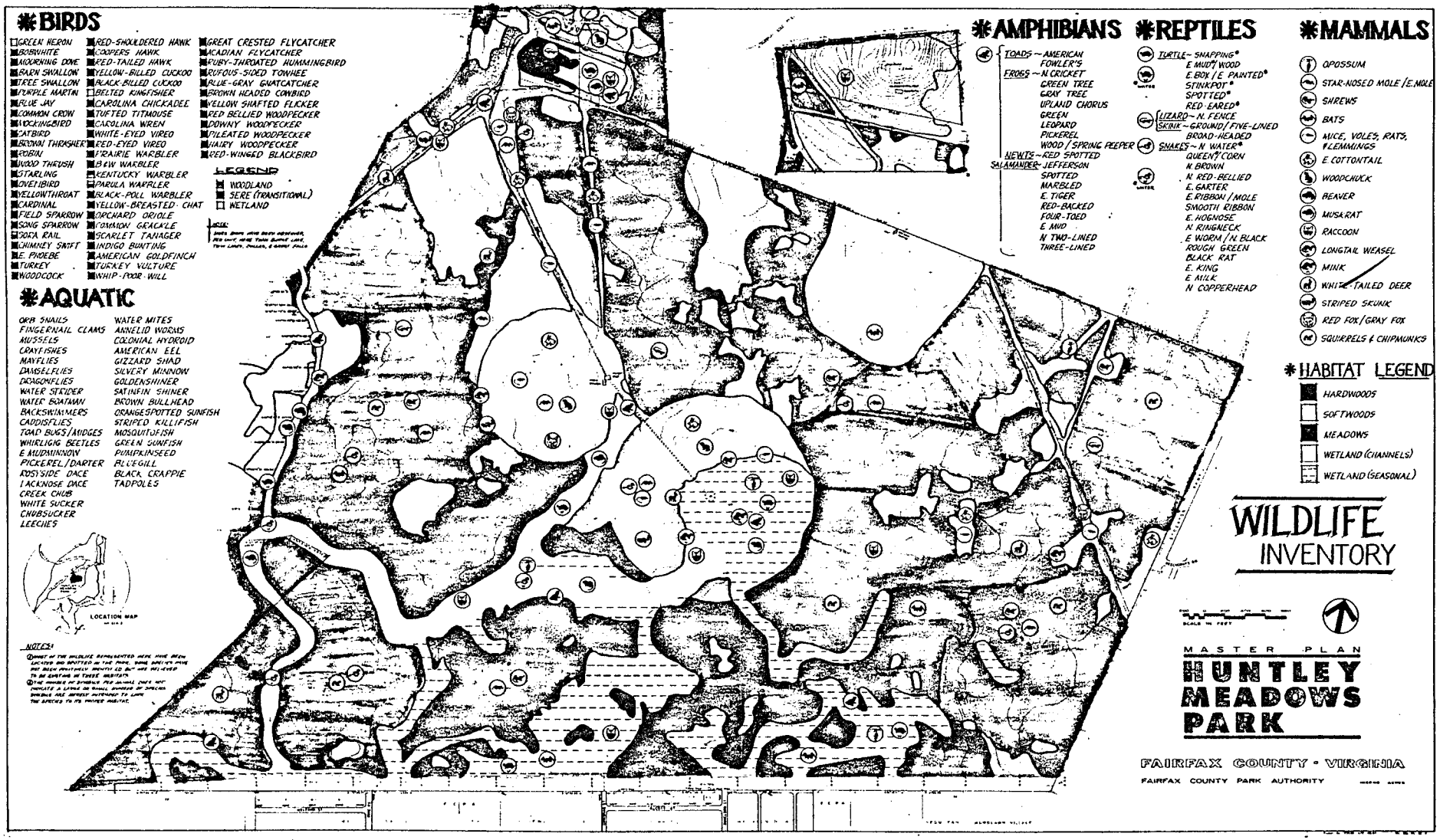
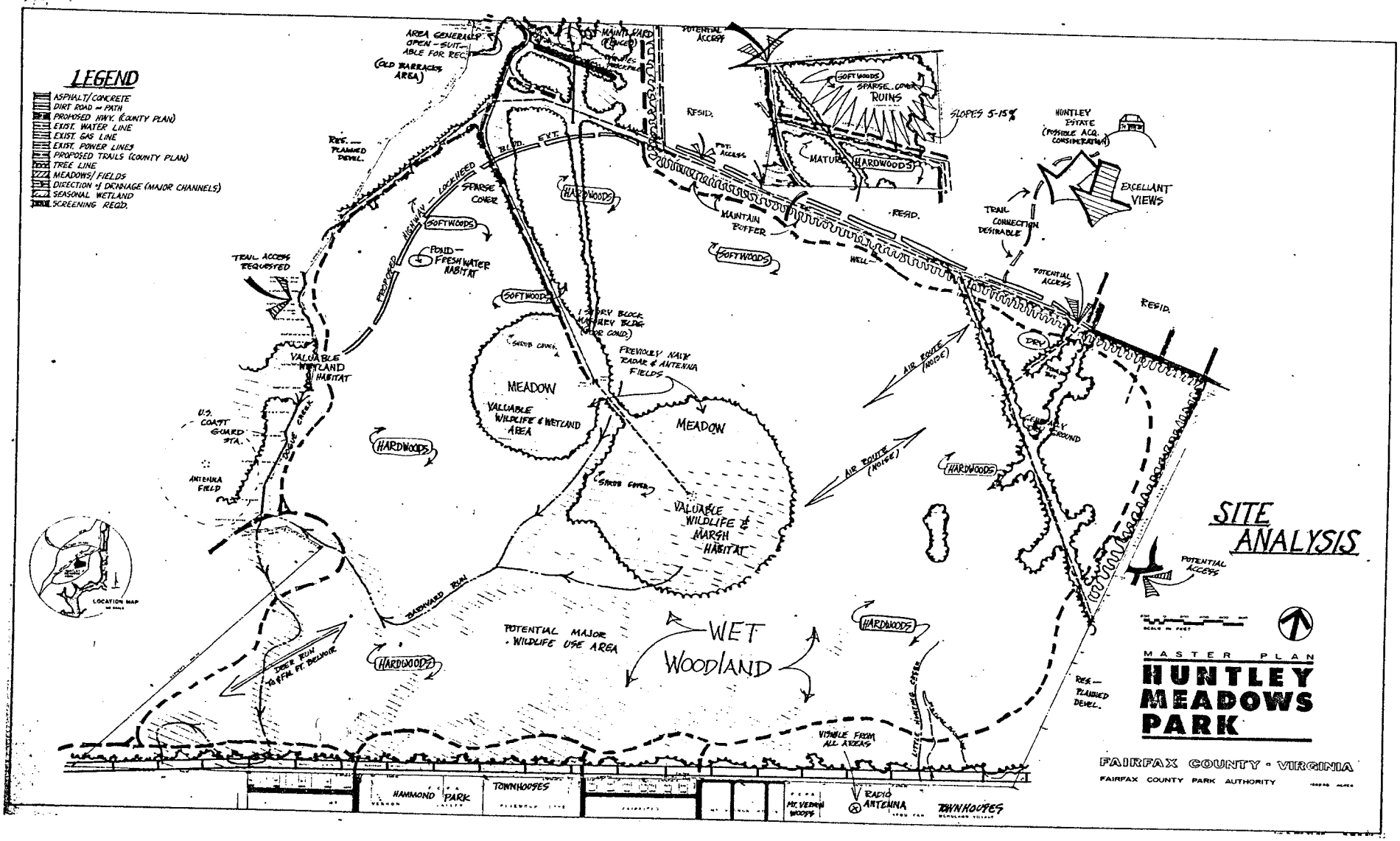
HYDROLOGY
MASTER PLAN
HUNTLEY MEADOWS PARK
FAIRFAX COUNTY - VIRGINIA
FAIRFAX COUNTY PARK AUTHORITY


*BIRDS
GREEN HERON
BOBWHITE
MOURNING DOVE
BARN SWALLOW
TREE SWALLOW
PURPLE MARTIN
BLUE JAY
COMMON CROW
MOCKINGBIRD
CATBIRD
BROWN THRASHER
ROBIN
WOOD THRUSH
STARLING
RED-EYED VIREO
CARDINAL
FIELD SPARROW
SONG SPARROW
SORA RAIL
CHIMNEY SWIFT
E. PHOEBE
TURKEY
WOODCOCK
RED-SHOULDERED HAWK
COOPERS HAWK
RED-TAILED HAWK
YELLOW-BILLED CUCKOO
BLACK-BILLED CUCKOO
BELTED KINGFISHER
CAROLINA CHICKADEE
TUFTED TITMOUSE
CAROLINA WREN
WHITE-EYED VIREO
PRAIRIE WARBLER
BLACK-POLL WARBLER
YELLOW-BREASTED CHAT
ORCHARD ORIOLE
COMMON GRACKLE
SCARLET TANAGER
INDIGO BUNTING
AMERICAN GOLDFINCH
TURKEY VULTURE
WHIP-POOR-WILL
GREAT CRESTED FLYCATCHER
ACADIAN FLYCATCHER
RUBY-THROATED HUMMINGBIRD
RUFOUS-SIDED TOWHEE
BLUE-GRAY GNATCATCHER
BROWN HEADED COWBIRD
YELLOW SHAFTED FLICKER
RED BELLIED WOODPECKER
DOWNY WOODPECKER
PILEATED WOODPECKER
HAIRY WOODPECKER
RED-WINGED BLACKBIRD
LEGEND
WOODLAND
SERE (TRANSITIONAL)
WETLAND
*AQUATIC
ORB SNAILS
FINGERNAIL CLAMS
MUSSELS
CRAYFISHES
MAYFLIES
DAMSELFLIES
DRAGONFLIES
WATER STRIDER
WATER BOATMAN
BACKSWIMMERS
CADDISFLIES
TOAD BUGS/MIDGES
WHIRLIGIG BEETLES
E. MUDMINNOW
PICKEREL/DARTER
ROSY SIDE DACE
LAKENOSE DACE
CREEK CHUB
WHITE SUCKER
CHUBSUCKER
LEECHES
WATER MITES
ANNELID WORMS
COLONIAL HYDROID
AMERICAN EEL
GIZZARD SHAD
SILVERY MINNOW
GOLDENSHINER
SATINFIN SHINER
BROWN BULLHEAD
ORANGESPOTTED SUNFISH
STRIPED KILLIFISH
MOSQUITOFISH
GREEN SUNFISH
PUMPKINSEED
BLUEGILL
BLACK CRAPPIE
TADPOLES
LOCATION MAP
NOTES:
*AMPHIBIANS
TOADS ~ AMERICAN
FOWLER'S
FROGS ~ N. CRICKET
GREEN TREE
GRAY TREE
UPLAND CHORUS
GREEN
LEOPARD
PICKEREL
WOOD / SPRING PEEPER
NEWTS ~ RED SPOTTED
SALAMANDERS ~ JEFFERSON
SPOTTED
MARBLED
E. TIGER
RED-BACKED
FOUR-TOED
E. MUD
N. TWO-LINED
THREE-LINED
*REPTILES
TURTLE ~ SNAPPING*
E. MUD* / WOOD
E. BOX / E. PAINTED*
STINKPOT*
SPOTTED*
RED-EARED*
LIZARD ~ N. FENCE
SKINK ~ GROUND / FIVE-LINED
BROAD-HEADED
SNAKES ~ N. WATER*
QUEEN* / CORN
N. BROWN
N. RED-BELLIED
E. GARTER
E. RIBBON / MOLE
SMOOTH RIBBON
E. HOGNOSE
N. RINGNECK
E. WORM / N. BLACK
ROUGH GREEN
BLACK RAT
E. KING
E. MILK
N. COPPERHEAD
*MAMMALS
OPOSSUM
STAR-NOSED MOLE / E. MOLE
SHREWS
BATS
MICE, VOLES, RATS, & LEMMINGS
E. COTTONTAIL
WOODCHUCK
BEAVER
MUSKRAT
RACCOON
LONGTAIL WEASEL
MINK
WHITE-TAILED DEER
STRIPED SKUNK
RED FOX / GRAY FOX
SQUIRRELS & CHIPMUNKS
*HABITAT LEGEND
HARDWOODS
SOFTWOODS
MEADOWS
WETLAND (CHANNELS)
WETLAND (SEASONAL)
WILDLIFE
INVENTORY
MASTER PLAN
HUNTLEY
MEADOWS
PARK
FAIRFAX COUNTY • VIRGINIA
FAIRFAX COUNTY PARK AUTHORITY


LEGEND
ASPHALT/CONCRETE
DIRT ROAD — PATH
PROPOSED HWY. (COUNTY PLAN)
EXIST. WATER LINE
EXIST. GAS LINE
EXIST. POWER LINES
PROPOSED TRAILS (COUNTY PLAN)
TREE LINE
MEADOWS/FIELDS
DIRECTION of DRAINAGE (MAJOR CHANNELS)
SEASONAL WETLAND
SCREENING REQD.
AREA GENERALLY OPEN — SUITABLE FOR REC.
(COLD BARRACKS AREA)
MAINT. YARD (REDUCED)
POTENTIAL ACCESS
RESID.
SOFTWOODS
SPARSE COVER
RUINS
SLOPES 5-15%
HUNTLEY ESTATE (POSSIBLE ACQ. CONSIDERATION)
EXCELLENT VIEWS
RES. — PLANNED DEVEL.
BLVD. EXT.
LOCKHEED HIGHWAY
HARDWOODS
MATURE HARDWOODS
MAINTAIN BUFFER
TRAIL CONNECTION DESIRABLE
TRAIL ACCESS REQUESTED
PROPOSED
POND — FRESH WATER HABITAT
WELL
1-STORY BLOCK HARVEY BLDG. (POOR COND.)
PREVIOUSLY NAVY RADAR & ANTENNA FIELDS
VALUABLE WETLAND HABITAT
MEADOW
VALUABLE WILDLIFE & WETLAND AREA
AIR ROUTE (NOISE)
U.S. COAST GUARD STA.
ANTENNA FIELD
BEAVER CREEK
VALUABLE WILDLIFE & MARSH HABITAT
BARNYARD RUN
POTENTIAL MAJOR WILDLIFE USE AREA
WET WOODLAND
DEER RUN
TO FT. BELVOIR
VISIBLE FROM ALL AREAS
LITTLE HUNTING CREEK
RADIO ANTENNA
TOWNHOUSES
HAMMOND PARK
MT. VERNON WOODS
LOCATION MAP
SITE ANALYSIS
MASTER PLAN
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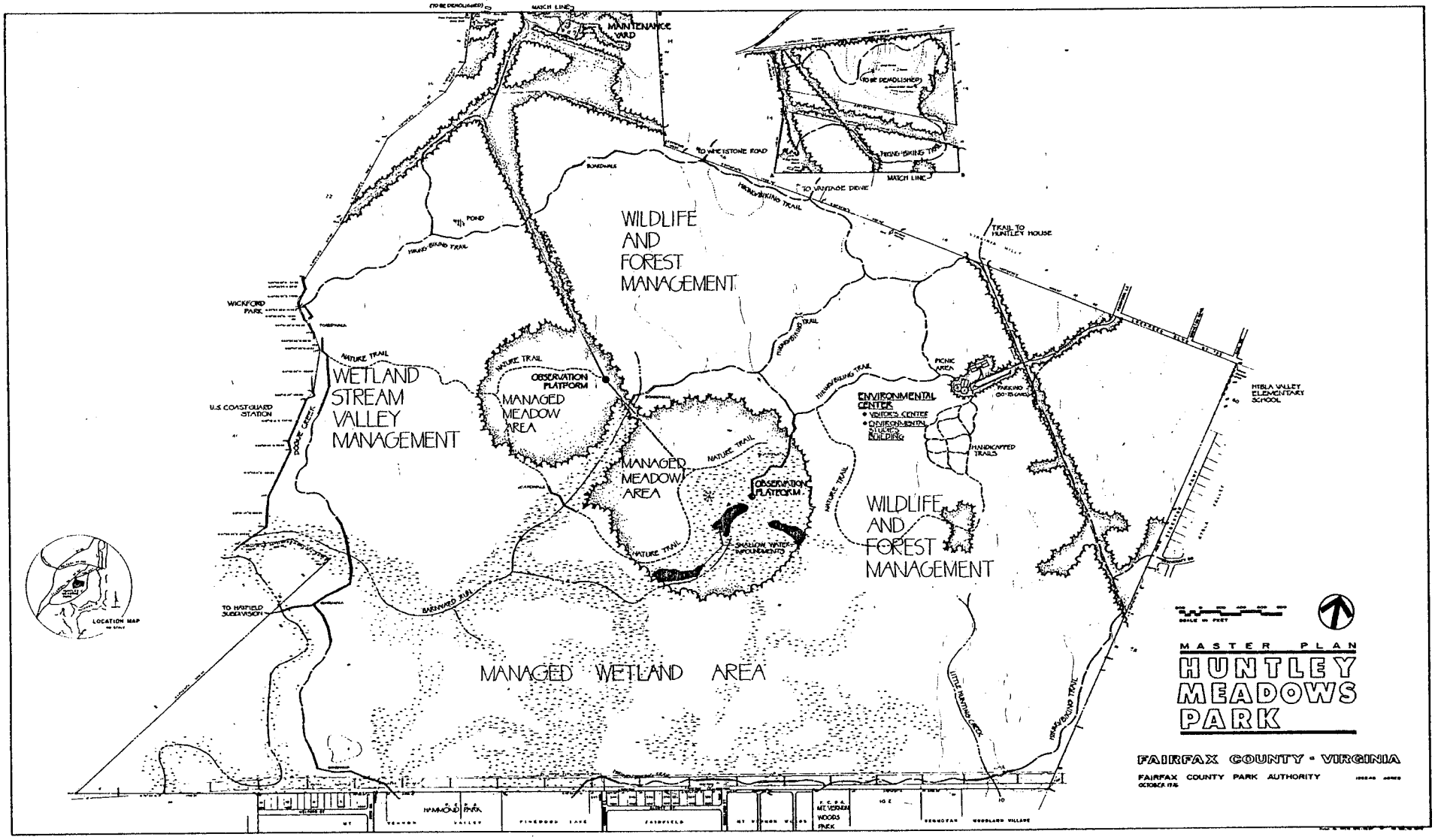
MAINTENANCE YARD
(TO BE DEMOLISHED)
MATCH LINE
TO WHITESTONE ROAD
TO VINTAGE DRIVE
WILDLIFE AND FOREST MANAGEMENT
POND
HIKING TRAIL
TRAIL TO HUNTLEY HOUSE
WICKFORD PARK
NATURE TRAIL
WETLAND STREAM VALLEY MANAGEMENT
OBSERVATION PLATFORM
MANAGED MEADOW AREA
PICNIC AREA
ENVIRONMENTAL CENTER
• VISITOR'S CENTER
• ENVIRONMENTAL STUDIES BUILDING
HANDICAPPED TRAILS
HYBLA VALLEY ELEMENTARY SCHOOL
U.S. COAST GUARD STATION
POHICK CREEK
MANAGED MEADOW AREA
OBSERVATION PLATFORM
WILDLIFE AND FOREST MANAGEMENT
SILLSTON WATER IMPOUNDMENTS
LOCATION MAP
TO HATFIELD SUBDIVISION
RAVENWOOD RUN
MANAGED WETLAND AREA
LITTLE HUNTING CREEK
MASTER PLAN
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OCTOBER 1976

Enclosure I Recreational Inventory
(Fairfax County Survey of Outdoor Facilities, October 1976)

RECREATIONAL INVENTORY
(Mt. Vernon & Rose Hill Planning Districts)
Within 3 Miles of Huntley Meadows Park
(Fairfax Co. Survey of Outdoor Facilities, October, 1976)

FCPA PARKS	ACRES	BALLFIELD	FOOTBALL/SOCCER	MULTI-USE COURTS	APPARATUS AREA	TOT LOT	TENNIS COURTS	TRAILS	PICNIC	REMARKS
Beulah	10.5	2*	1*						1#	
Bryant Farm	46.4	2+	1+							
Cameron	7.4				1			1	1	
Dogue Creek S.V.	4.5									
Fort Hunt	19.3	1	1		1	1	2	1	1	
Franconia Park	59.5	4#	2#	2#	1#	1#	8#	1#	1#	1 archery# 1 comm. cntr.#
Greendale G. C.	148.9									18 holes
Groveton Heights	3.9	1		1	1				1	
Hammond	13.6	1								
Hayfield	2.1									
Hollin Meadows	5.3									

*lighted
+interim
#proposed

Huntington	3.3	1		1	1	1				
Jefferson Manor	13.9	1		1	1	1	2#		1	
Kirk	6.3									
Lee District	137.6	3# 2	2	4# 1+	1	2#	8*	1	1	1 swim. pool# 1 comm. cntr.#
Lee High	23.6	2	1		1	1	2	1	1	1 archery
Loisdale	8.6			1#	1	1	2#	1#	1	
Mark Twain	10.0				1			1		
Martin L. King	20.1	1		1	1	1	2#		1	1 swim. pool
Mt. Vernon Comm.	17.0				1#		4*	1	1	
Mt. Vernon Dist.	87.8			2#	2#		6#	1	1#	1 comm. cntr.# 1 swim. pool# 1 ice rink#
Mt. Vernon Manor	18.7	1		1# 1	1	1	2	1	1	
Mt. Vernon Woods	7.2	1			1		2	1	1	
Newington	18.4	1	1	1	1				1	
Paul Springs S.V.	9.9									
Ridgeview	16.6			1	1	1				

* lighted
\+ interim
\# proposed

Stoneybrooke	14.3			1	1	1	2	1		1 comm. cntr.
Stratford Landing	6.4				1	1	2*			2 handball/ 2 volleyball#
Tara Village	3.7	2	1							
Washington Mill	9.6					1		1		
White Oaks	9.6									
Wickford	7.6			1		1#		1	1	
Williamsburg Manor	25.0			1	1			1	1	
Woodlawn	11.4			1	1	1	2		1	
Woodley Hills	8.2	1			1	1	2		1	
TOTAL EXISTING PROPOSED		20 7	8 1	12 10	19 4	14 4	28 20	14 3	16 3	
OTHER PUBLIC FACILITIES										
Collingwood Sch. Site	12.0	2	1	1#	1#		4#			
G.W. Grist Mill	7.0									
Gum Springs Center		1		2*	2		2*			
Mt. Vernon Mem. Hwy.	1005.6							1	1	
Fort Hunt	195.0	3				1			1	1 comm. cntr.
TOTAL		6	1	3	3	1	6	1	2	1 comm. cntr.
PRIVATE FACILITIES		9		5			34		1	44 swim. pools 3 golf courses 3 volleyball 1 marina 1 equestrian trail

*lighted
+interim
#proposed

RECREATIONAL INVENTORY

HIGH SCHOOLS	BALLFIELDS	B/B COURTS	B/B GOALS	FOOTBALL	SOCCER	TENNIS	TRACK	APPARATUS AREA	
Edison	4**	2	4	1*	1	8	1		
Fort Hunt	3**	3	6	1*	1	8	1		
Groveton	3**		6	1*		6	1		
Hayfield	6**	7	14	1*	1		1		
Lee	2**		3		1	6*	1		
Mt. Vernon	3	2	10	1*		7	1		
INTERMEDIATE SCHOOLS									
Bryant	3	2	4	1		4			
Foster	3	2	4		1	2*			
F.S. Key	2	3	8		1	2		1	
Twain	2	2	4		3	2	1		
Whitman	2	2	4		3	2	1		

*lighted
**one field lighted
#proposed

ELEMENTARY SCHOOLS									
Belle View	2	2	6		1			1	
Bucknell	2	2	4					1	
Bush Hill	2	1	2		1			1	
Cameron	2	1	2					2	
Clermont	2	2	4		1			1	
Drew Smith	2		4	1				1	
Forestdale	2	2	4		1			1	
Fort Hunt	1	2	4		1	2		1	
Franconia	1	1	6					2	
Groveton	2	4	8		1		1	1	
Hayfield	2		4		1			1	
Hollin Hall	2	1	3		1			1	
Hollin Hills	1	2	5		1			2	
Hollin Meadows	1	2	4					2	
Hybla Valley	2	2	4		1			2	
Mt. Eagle	2	2	4		1			2	

* lighted
** one field lighted
# proposed

Mt. Vernon Woods	2	2	4		1			2	
Quander Road	2	1	3		1			2	
Riverside	3	2	4	1				1	
Rose Hill	3	2	4	1	1			2	
Springfield Estates	2	2	4		1			2	
Stratford Landing	2	2	4		1			1	
Virginia Hills	2	1	3		1	4		1	
Washington Mill	2	2	4					1	
Waynewood	3	2	4		1			1	
Wilton Woods	2	2	4		1	1		2	
Woodlawn	3	2	4		1			1	
Woodley Hills	3	1	2		1			1	
TOTAL EXISTING	87	70	175	9	33	52	9	41	

SYMBOLS

* lighted
** one field lighted
# proposed

APPENDIX A

HUNTLEY MEADOWS PARK - MASTER PLAN

BASELINE ENVIRONMENTAL STUDY

STAFF REPORT

Prepared by:
Division of Conservation
Fairfax County Park Authority
September 1975

BASELINE ENVIRONMENTAL STUDY

HUNTLEY MEADOWS PARK

STAFF REPORT

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STAFF REPORT
GLOSSARY OF TERMS AND ABBREVIATIONS

Abundance	The total number of individuals of a species in an area, population, or community.
Baseline	Basic level from which determination of change can be made or evaluated.
Benthic	Refers to the bottom of any body of water.
BOR	Bureau of Outdoor Recreation.
Community	A group of one or more populations of plants and animals in a common spatial arrangement; an ecological unit used in a broad sense to include groups of various sizes and degrees of integration.
Density	The number of individuals in relation to space in which they occur.
Diversity	The number of species in an area.
Ecology	The study of interrelationships or organisms to one another and to the environment.
Environmental Assessment	Evaluation of the external conditions which may influence organisms.
E.Q.C.	(Environmental Quality Corridor) - An open space system designed to link and preserve natural resource areas and provide accessible outdoor recreation. Wildlife habitats, potential reservior sites, utility rights of way, wetlands, commercial farms, historic sites, and citizen-identified environmental areas are all used to further delineate the system.

Habitat	The sum total of environmental conditions of a specific place occupied by an organism, by a population, or a community.
Home Range	The area around an animal's established home which is traversed in its normal activities.
Hydrology	The science dealing with water and snow, including their properties and distribution.
Indicator	An organism, species, or community which shows or illustrates the presence of certain environmental conditions.
Natural Resource	Those actual and potential forms of wealth supplied by nature.
OCP	Office of Comprehensive Planning
PLUS	Planned Land Use System
Quadrat	A sampling area, originally square, and used for analyzing vegetation.
Range	The extent of the geographic area in which a plant or animal occurs.
Subclimax	A subfinal stage in succession in which further development is inhibited because of the influence of some factor other than the climatic factors.
Transect	A long, narrow sample area, or a line, used for analyzing vegetation; essentially a cross section of vegetation.

ABSTRACT

Huntley Meadows Park, under the control and jurisdiction of the Fairfax County Park Authority, Fairfax County, Virginia, was acquired from the Federal government in 1974 under the "Legacy of Parks" program.

During the period of nine months, ending in July 1975, the Conservation Division of the Fairfax County Park Authority was assigned the task of obtaining "baseline" environmental data on the park site for use in the ultimate master planning process.

It was found after the initial field work was completed, that the park offers many unique natural features, and an abundance of vegetative and animal species.

For ease in reference, and to allow the addition of supplemental data when acquired, the report has been divided into three sections:

SECTION I	GENERAL INFORMATION/BACKGROUND
SECTION II	BIOLOGICAL/PHYSICAL DATA
SECTION III	ACKNOWLEDGEMENTS AND CREDITS

INTRODUCTION

Huntley Meadows Park is the largest single parkland (1,262 acres) currently under the jurisdiction of the Fairfax County Park Authority. Located within a highly urbanized area, it represents an invaluable resource to present and future generations of county citizens in terms of "open space" alone. Furthermore, the unique and diversified character of the land offers the Authority the opportunity to develop innovative outdoor/indoor recreational concepts for park visitors and to undertake the challenging task of comprehensive and effective natural resource management.

The following report has been prepared by the Conservation Division of the Fairfax County Park Authority for the purpose of providing baseline environmental data for use in the planning and development of the park site.

Specifically, the objectives of the nine month study by the Conservation Division were to:

1. provide basic (baseline environmental data on existing biological and physical conditions on site,

2. determine environmental constraints on park development plans,

3. determine the need for follow-up studies within the Conservation Division two of which have been identified:
   a. a detailed Natural Resource Management Plan
   b. a detailed Interpretive Plan

4. to realise the park's potential for recreation as a response to an aesthetic experience and expanded awareness of, and interaction with, the natural world.

HUNTLEY MEADOWS PARK

FAIRFAX COUNTY PARK AUTHORITY

STAFF REPORT

SECTION I GENERAL INFORMATION/BACKGROUND

A. Site Location

Huntley Meadows Park is located in the southeast portion of Fairfax County, Virginia, specifically within the Lee Magisterial District. Map reference numbers of the site are: 92-1; 92-3; 92-4; 101-1; and 101-2.

Within the Fairfax County Park Authority structure, the park is located in the Rose Hill Planning District, Maintenance District III, and Naturalist District III.

B. Site Access

Primary vehicle access to the park is from Kings Highway (Rte. 633) near the intersection with Telegraph Road (Rte. 611). Although "walk-in" access is available from most of the park's perimeter, such access is mainly from Lockheed Blvd., and Wickford, Hammond and Mount Vernon Woods Parks.

C. Site History

Information is lacking within this report with regards to the value of Huntley Meadows Parks as an area of archaeological importance. Such value is not known by this staff. What is now known (named) Huntley Meadows Park was referenced in 1772 as a tract of land called "Huntley". The tract was acquired in that year by the George Mason family and remained within the Mason family possession until prior to the Civil War.

More recent times have seen the site proposed as the terminal point for airships (ending in the 1930's with the Hindenberg disaster) and ownership by the Federal Government. Partial use of the site (north, east and southern perimeter) was obtained by agreement between the U.S. Department of the Navy and the Authority in July 1971, and was referenced as "Hybla Valley Trails". The remainder of the site was later declared surplus and was acquired by the Authority in 1974 under the

"Legacy of Parks" program. As a part of such acquisition, a conceptual plan was prepared by the Authority. This plan is currently on file with the agency.

A major value of the park at present is the diversity of both habitat and wildlife. Such value exists both due to size, and may be largely attributed to the Federal Government's use and maintenance, including limited human use and otherwise limited development.

Since November 1974, the Conservation Division of the Authority has been charged with the responsibility of conducting basic field research on the site to determine existing biological conditions. This research has been conducted by staff members of the Division working in areas of particular interest or expertise, by selected members of the academic community, and by citizens of the county working closely with staff, who are versed in particular areas of biological survey importance. A full listing of such persons will be found in Section III: ACKNOWLEDGEMENTS AND CREDITS.

D. PLUS Program - Fairfax County

Under the Planned Land Use System (PLUS) program for Fairfax County prepared by the Office of Comprehensive Planning , Huntley Meadows Park is located within Planning Area IV. Within the Planning Area, two (2) Planning Districts are involved, Rose Hill (RH) and Mount Vernon (MV). Further the park is located in or adjacent to five (5) Planning Sectors: RH4, Lehigh Community, RH 6, Mt. Comfort Community; RH 7, Hybla Valley Community; MV 2, Hybla Valley Community; and MV 8, Woodlawn Community. Of particular importance is RH 7 which encompasses the entire park area.

It has been recommended in the PLUS report that remaining open space lands adjacent to or near the Huntley Meadows Park site be developed for a variety of purposes. It was further recommended that existing smaller park sites be developed and that additional parkland or open space be acquired via dedication at the time of commercial or residential development. Such acquired lands would provide active recreation needs on a "local serving level".

Although there is some recommendation for recreational development of the Huntley Meadows Park in the PLUS report, no specifics are given as to particular needs. Reference in made to the need for access routes to the park site (via trails) from surrounding neighborhoods.

Located to the northwest of Huntley Meadows Park in RH 4, Leigh Community Planning Sector, is the Lehigh Complex Area. In September 1975, the Fairfax County Board of Supervisors approved the rezoning of the site. It may be anticipated that the development of the site will have major impact upon the area, and that there will be some impact upon the Dogue Creek headwaters area.

An additional recommendation within the PLUS report which will have an effect on Huntley Meadows Park is that of the extension of Lockheed Blvd., through the northern most portion of the park, to an eventual connection with an extension of South Van Dorn Street. Opposition has been raised to the proposal and at present the issue is not resolved.

E. Existing Facilities

Certain facilities remain on site as the result of occupation and use by the Federal Government. Some use of these facilities is being made at present, and other uses are planned or proposed.

Currently in progress are plans for the use of the fenced "compound" area in the northern portion of the park as a maintenance area for Maintenance District III operations. Such use is normally not regarded to be compatible with the proposed uses of the park by this Division, but the need for such an area is recognized by staff. In making such use of the area by maintenance, adequate protective measures must be taken to assure prevention of waste petroleum products and cleaning agents from entering the drainage system of the park.

Adjacent to the "compound" area is a large section of asphalt paving, currently in limited use as public parking during special programs. There is also an asphalt road bisecting the parkland, extending to approximately the middle of the park.

Within the interior of the park, located at the southern terminus of the above mentioned road, and within the northern-most "antenna field", is a cinderblock (CBS) building. Since acquisition of the site by the Authority, this building has had a high rate of vandalism.

Certain easements are currently on site, and additions may be considered in the future. Such easements include water and sewer lines. Such easements are not described here in detail but must be taken into consideration with regards to future development. Such easements are identified on base maps of the site.

F. Section I Summary

1. There are currently on site adequate (if limited) man made facilities which will allow some immediate public use of the park.

2. It is felt by staff that Huntley Meadows Park must be viewed as a major natural resource to the citizens of both today and tomorrow. To retain maximum quality of the site will require careful consideration of each development proposal and careful judgement of the impact upon the site by each development and resulting citizen use if that proposal is implemented.

3. Although it is expected that major use of the park site will be made by local residents, it is felt that the park development must be at county level of use, with potential visitors coming from the entire county area. It must be considered also that additional potential use may be forthcoming from our neighboring jurisdictions. The impact of such use, unless controlled, could destroy the quality of the park, including loss of habitat, wildlife, and recreation value.

4. In the view of the staff, a critical deficiency in the OCP-PLUS report on Planning Area IV is the failure to fully recognize the inherent value of the site, both as a major wildlife habitat and as a "wetland" area. Such recognition is essential to any planning process for this park. Through contact made with OCP it was determined that no additional work has been done on the Huntley Meadows area, although some efforts have been made towards improved assessment techniques in determining Environmental Quality Corridors. It would be hoped that efforts would be made to ammend the approved Planning Area IV Plan, with emphasis on need to protect the Dogue Creek area.

HUNTLEY MEADOWS PARK

FAIRFAX COUNTY PARK AUTHORITY

STAFF REPORT

SECTION II BIOLOGICAL /PHYSICAL DATA

A. General

Prior to any planning process, it is of major importance that certain "baseline" information be obtained regarding the biological and physical characteristics of the proposed site. Such data can serve to provide guidance to all persons involved in the planning process to make the best use of the land (Natural Resource Planning), and hopefully to avoid errors which can be costly both ecomonically and environmentally.

It was the primary responsibility of the Conservation Division during the period of mid-summer 1974 through July 31, 1975, to gather such data on the Huntley Meadows Park. It should be recognized that the data obtained thus far is only the beginning, as the planning process continues additional data will be obtained by the Conservation Division staff working in conjunction with other Authority staff on the overall site area, and particular attention will be given to those areas where physical development is proposed.

The staff realized during early visits to the site that, in Huntley Meadows Park, the Fairfax County Park Authority was obtaining a tract of land of major importance. Environmentally, initial observations have been confirmed through the field research conducted.

Complete reports of staff on the biological data collected are available through the Conservation Division to all interested persons. The data included within this report includes the major information from those reports.

B. Economic Value

Economically, Huntley Meadows Park is of major importance but such value may go unnoticed unless clearly stated to, and understood by, the public.

A major portion of Huntley Meadows Park may be classified as "wetlands" under one or more classifications utilized by the Federal Government or the Commonwealth of Virginia. Although major emphasis in recent years has been towards the protection of coastal wetlands, there is increasing emphasis being placed on interior (non-coastal) wetlands as well.

Specifically, wetlands function in the following manner:

1. Erosion Control: the buffering quality is derived from the ability of wetland associated vegetation to establish dense root systems which stabilize the soil.

2. Water Quality Control: the dense growth of wetlands acts as a filter, trapping upland sediment. Wetlands can and do, assimilate and degrade pollutants through complex chemical processes. Research data has shown that wetlands, marshes in particular, act as a natural treatment system comparable to artificial tertiary treatment of sewage.

3. Flood Control: the substratum of wetlands acts as a giant "sponge" in receiving and releasing water.

In view of the rising cost of flood control projects and the economic losses due to flooding and erosion in Fairfax County, it would be to the advantage of the Authority to take a closer look at the economic values of wetlands, and utilize Huntley Meadows Park (in part), as an illustration of such values.

The description of wetland "types" is discussed elsewhere in this section.

C. Survey Methodology

Prior to discussion of the survey methodology, the administrative staff of the Conservation Division would like to express their sincere appreciation to the field staff of the Division and in particular to those many persons who assisted staff in the surveys. Without their major efforts, this important function of the Division would not have been possible.

Due to the subject matter covered in each area of the survey, the individual method of survey varied. Individual methodology will be found in detail in each field report. There were, however, certain overlapping activities in each survey

method and it is the intent of staff to take full advantage of such activities in formulating a singular method of environmental assessments on future sites. A survey form utilized in part is shown in the APPENDIX II-A.

The entire survey process was consistent throughout in the following areas:

1. All survey information is based upon a habitat map prepared from topographic maps and aerial photographs. Spot checks were made in the field to determine or confirm habitat sites. A major base map was prepared, and smaller field maps made from the base map. The base map is available for viewing in the office of the Chief Naturalist.

2. Search of existing literature for any information gathered to date, and determination of best survey method to be utilized.

3. Establishment of reference texts to be utilized in surveys.

D. Survey Deficiencies

Two areas of major deficiencies exist regarding baseline physical data for Huntley Meadows Park: 1) Soils; and 2) Hydrology. Both deficiencies must be corrected prior to any major planning or development efforts. Data collected by staff to date follows:

1. Soils: Huntley Meadows Park is located entirely within the Coastal Plain geologic province. According to the OCP-PLUS report on Area IV, the soils are regarded as either poor or marginal for septic tank use (indicating poor percolation quality) and slippage-prone swelling clays underlie most of the area.

1. Quadrat 5: Sassfras soil with yellow red to red clay. Area of bewt drainage on site.

2. Quadrat 12: Woodstown soil with sandy top soil. Water table at 24" below surface.

3. Quadrat 12: Water table at 12" below surface.

4. Quadrat 33: Othello soil, fragi pan at 9" water table at surface.

5. Quadrat 34: Lenoir soil, water table at 8".

6. Quadrat 44: Elkton soil, water table at surface.

7. Quadrat 44: Othello soil, water table at surface, pan 3 to 4 feet below surface.

A request has been made to the Fairfax County Soil Scientist to carry out a complete survey of the site. It has been indicated that the survey would require 2-3 weeks to complete, but because of pending rezoning cases, work could not begin until after January 1, 1976.

In addition, a request was made to the U.S. Department of the Navy for any possible soils information. The result of that request was negative, due in most part to the classification of the site by the military.

2. Hydrology: Hydrologic data regarding this site is limited. Such data as is available is contained in reports submitted by Parson's, Brinkerhoff, Quade and Douglas (P.B.Q. & D.) as part of the work program for the "Master Plan for Flood Control and Storm Drainage in Fairfax County," Letter Report: Southeastern Basins Hydrology T.O. 8.3, dated September 1974.

Further field work was conducted in June 1975 by P.B.Q. & D., that work currently being unpublished. A review of field notes indicated the following:

1. Major drainage of the site is via Dogue Creek and Barnyard Run, within the Dogue Creek Watershed.

2. There is some drainage in the easternmost portion of the site into the Little Hunting Creek Watershed.

3. The field survey indicated that in general drainage was via poorly defined channels, and that at the time of the survey much of the area that was covered was dry.

E. Habitat Areas

As previously stated field surveys were based on "habitat" areas defined first from

aerial photographs, and them "spot checked" in field activity. Such habitat areas have been initially based upon vegetative cover, but are ultimately dependent upon a variety of factors: soils, hydrology, wildlife use, adjacent areas, and the influence of man.

Within the Huntley Meadows Park, a total of 13 habitat areas were defined:

1a - Hardwood greater than 80% predominant, approximately 100% cover.

1b - Hardwood 50%-80%, softwood up to 50%, approximately 100% cover.

2a - Softwood greater than 80% predominant, approximately 100% cover.

2b - Softwood 50%-80%, hardwood up to 50%, approximately 100% cover.

3a - Hardwood predominant, less than 100% cover (i.e. much bare ground, open ground, visible).

3b - Softwood predominant, less than 100% cover (i.e. much bare ground, open ground, visible).

4a - Wetland - Shallow freshwater marsh.

4b - Wetland - Shrub swamp.

5 - Wetland - Forested.

6a - Open grassland/meadow, left idle.

6b - Shrub cover area.

7 - Grassland, may be mowed (i.e. right of ways & road shoulders)

8 - Bare dirt.

Within the above habitat areas, field surveys were conducted. Although not each

area of a particular habitat (i.e. all areas listed as 1a) was surveyed, adequate samples were taken to assure major inventory of each type.

For the purpose of future field reference it should be noted that the base map illustrating the above 13 habitat types was marked off into 1,000 foot sections (quadrats). A total of 83 such quadrats were established.

F. Habitat Deficiencies

In compiling data on habitat areas two major deficiencies were noted in Huntley Meadows Park. First, although there are several small streams on the site, there is only a single "seasonal" shallow pond on the entire site (located in quadrat #21). This lack of free water greatly restricts use of the area by certain species of wildlife.

Secondly, no areas of the Oak/Hickory/Beech community were found although such areas are found to the east of the park in Mount Vernon District Park and White Oaks Park (Mount Vernon Magisterial District), and in portions of the Pohick Watershed (Springfield Magisterial District) located to the west.

G. Vegetative Survey

The vegetative survey of Huntley Meadows Park was divided into two parts: 1) Trees and Shrubs; and 2) Non-woody plants. The summary of findings contained in this report is likewise divided into these two areas, except for the consolidation of some limited information. A composite listing of vegetative species is to be found at the end of this section as APPENDIX B.

Initial field findings recorded a total of 234 species of plants, representing 78 of the 168 recognized plant Families. Of those recorded, 49 of the species are regarded as trees or shrubs. In addition 14 species of Lichens and Mosses were recorded.

There is some variation of opinion regarding the importance (value of the listed species for wildlife foods). Fairfax County by its geographic location, is at the southern terminus (range) of certain "northern" species of plants, and at the same time at the northern terminus (range) of certain "southern" species of plants. Within reference materials utilized, the demarcation of north and south areas of wildlife usage (food) runs through Fairfax County. When referencing the Southeast

Region, 29 of the listed species of plants have food value; when referencing the Northeast Region, 34 species are listed.

It must be remembered that certain species of plants provide food value only at certain seasons of the year, and that some species will be utilized in preference to others. When preference foods are not available, other plant species not shown in reference lists will be eaten. It must also be realized that food value (to wildlife) is but one important aspect. Certain aspects may provide no value as food but may be of major importance for nesting, cover, or other needs.

1. Trees and Shrubs: Eighteen sample plots measuring .04 square hectare(.10 acre) in size were taken to achieve a .14% cruise intensity of the entire tract. Prior to actual field investigations, additional studies were made of aerial photographs, specific habitat areas were identified, and a numbered quadrat system was determined over the park. Each habitat area sustaining tree and/or shrub growth was sampled at least three times. Detailed results of the survey will be found in Tables A-D in the field report.

The majority of the wooded portions of Huntley Meadows Park support subclimax or intermediate stage vegetation. Sweetgum composed of 30% of wooded areas; Red Maple, 15% and Virginia Pine, 15.5% for a total of 61.5% of the area. Of all the trees sampled in the study, 35% were less than 4" DBH (Diameter Breast Height), and only 20.7% of the trees tallied has a DBH of 8" or more. The estimated stand height on 15 of the 18 samples is 50 feet or less.

2. Non-Woody Plants: A total of 244 sample plots were taken in all habitat areas with the exception of 2b and 8. Sample plots were consistent in size, measuring 1.0 meter by 0.4 meter. The number of samples taken in a given habitat area varied. Samples continued to be taken in a given area, until a significant lack of new species were found. Samples within a given habitat area were selected at random and major efforts were made to avoid bias. Detailed results of the survey will be found in the field report.

As might be anticipated, the greatest number of species and densest ground cover was found in the open grassland, shrub areas, and marsh areas. The lowest number of species and least amount of ground cover were in the forested (wooded) areas.

In addition to the basic information desired on the non-woody plants, additional information was gathered and noted by quadrat number on; unique areas; areas containing unusual/rare plants for Fairfax County; and those areas being utilized by wildlife.

H. Wildlife Surveys

Surveys of wildlife populations offer problems not found in other areas of survey. The major difficulty confronted is the mere fact that wildlife move from one point to another. Because of the area "carrying capacity," a small number of deer may create conditions indicating a population far in excess of actual numbers on the site. Other species of wildlife may be quite limited in range, allowing accurate sampling of numbers. As in all surveys, accurate results can only be obtained through many hours in the field.

Excluding the aquatic areas of survey which are treated separately, the wildlife surveys of Huntley Meadows Park were developed for four areas: Mammals; Birds; Reptiles; and Amphibians. Initial survey methods were established independently by staff responsible for the survey, based upon referenced survey techniques.

1. Bird Survey (breeding): Breeding bird census in the past have involved a mapping technique which attempts to obtain quantitative data. On any wide scale the procedure is very time consuming and impractical. Dr. Al Geis, Urban Bird Specialist, Bureau of Sports Fisheries and Wildlife, U.S.F.W.S. has developed a method of determining an index to bird use which can be applied easily and quickly to a given area. The Urban Wildlife Research Center working with the Fairfax County Planning Commission on a county-wide study, used a portion of Huntley Meadows Park as one of their sample areas. The data (species list) collected in this sample area is included in this report. It is planned that this type of survey will be expanded to include other portions of Huntley Meadows Park, and at other seasons to determine comprehensive bird use, i.e. food and shelter in winter, food and rest in fall and spring migration.

A breeding bird census is a valuable environmental indicator because it is taken at a time when birds are most dependent of the habitat. Birds are then defending a territory, using it for shelter, as well as feeding young. The birds being "tied" to the area reduces one of the previously mentioned problems of movement.

Briefly, the method devised by Dr. Geis utilizes sampling segments, each segment being 100 yards long and 100 yards wide. Sampling is done by walking through the center of the segment (transect line), recording everything appearing within the segment. A strict time limitation of four minutes/segment is imposed.

The area sampled under Dr. Geis' method was in the northeastern portion of the parkland, areas mainly of hardwoods and cutover scrub growth. Twenty segments were sampled with 10.20 (average) birds per sample. It was noted that Huntley Meadows

is significantly higher than indexes from other study areas of Fairfax County. Surveys conducted in other locales by the Urban Wildlife Research Center gave the following results:

a. Combined three study areas near Burke Lake- 5.5 birds/unit

b. Combined two study areas near Twin Lakes- 5.9 birds/unit

c. Combined three study areas near Dulles- 7.2 birds/unit

d. Combined two study areas near Great Falls- 6.6 birds.unit

e. Combined two study areas Huntley Meadows- 10.2 birds/unit

Within the month of June, 41 species of birds were observed by Urban Wildlife Research Center personnel. In seven additional field trips by staff and volunteers during the month, 19 additional species were noted, bringing the number of species noted in that one month to 60. A listing of those species will be found at the end of this section in APPENDIX C.

Although the methods devised by Dr. Geis are currently being used only for bird studies, it is hoped that in the future such studies will be able to be projected to habitat quality and population density and diversity of other animal species.

2. Mammal Survey: Four census methods were utilized in conducting a non-quantitative survey of mammals in Huntley Meadows Park: observational sample area counts; transect trapping (small rodents); pellet counts (deer); and time-area counts (squirrels). Due to logistical problems, the methods initiated by Dr. Geis (see bird survey) were not feasible at the time of the study, although it was felt by staff that the methods have much promise for the future.

Representative habitat areas were defined using base maps, aerial photographs, and field investigations. Field observations for recording purposes were: actual sightings of mammal species; tracks; signs; bedding sites; etc. Information was then recorded on base maps previously described.

The field report indicates eight major mammal habitat areas within the park:

a. Upland Hardwood Forest

b. Lowland Hardwood Forest

c. Planted Pine Areas

d. Transitional Zones (seres)

e. Freshwater Marsh

f. Fresh Meadow (seasonally flooded)

g. Shrub Swamp

h. Open Meadows

The diversity of habitat supports a varied and plentiful mammal population. Thirty-six species of mammals are believed to occur within the park, representing seven Orders. Of the 36 species, 19 have been definitely identified as being present. Further information is available in the field report.

The complete listing of mammals both confirmed and surmised will be found at the end at this section as APPENDIX D.

3. Reptile Survey: Although the "range" area of reptiles is relatively small when compared to mammals or birds, the unobtrusive movements and habits are reptiles coupled with the nocturnal nature of many species, makes detection in the field a "chance" circumstance.

The results of the field survey and reported species list is the result of:

a. Search of the variety of habitats existing on the park site.

b. Supplemental reports of field personnel engaged in other field activity.

c. Search of reference materials.

Three species of turtles and five species of snakes were seen and reported on the site. No observations of lizards were made. Reference materials indicate that a total of 7-8 species of turtles may occur, 18 species of snakes may be present, and four species of lizards may also occur, because of habitat and range.

A complete listing of reptiles both confirmed and reported in literature for this area will be found at the end of this section as APPENDIX E.

4. Amphibian Survey: Through habitat search, field observation, and voice recordings, 10 species of amphibians (Order Anura) were located and identified at Huntley Meadows Park.

Search of appropriate literature indicates an additional member of the Order Anura should be present (Hyla Cinera- Green Tree Frog), as well as 10 members of the Order Caudata. A complete listing would include a total of 21 species of amphibians.

The life cycle and physiological requirements of the amphibians limits the habitat areas where they will normally be found. Because of reduced habitat area for amphibians, a smaller area of Huntley Meadows was surveyed. A possible explanation for non-observance of the Caudata is their secretive nature.

A complete listing of amphibians both confirmed and reported in literature for this area will be found at the end of this section as APPENDIX F. Included in that listing is the relative abundance of each species.

I. Aquatic Biological Survey

It has been previously cited that one of the habitat areas seriously lacking the Huntley Meadows Park is that of "open" or "free" water.

A field survey was conducted by staff during the spring and summer months in existing aquatic habitats.

1. Dogue Creek at Quadrat 30
2. Barnyard Run at Quadrat 33
3. Pond at Quadrat 21
4. Dogue Creek, Swamp at Quadrat 40

5. Drainage ditch at Quadrat 13

Surveys were conducted at each site utilizing two methods of collection. Fish were sampled using a 10 foot seine with 1/4" (0.6 cm) nylon mesh. Benthic fauna were sampled with aquatic dip nets. Organisms collected were either identified in the field or preserved in 10% formalin for identification in the laboratory.

A total of 26 species of aquatic organisms were collected at the five sites mentioned. The most diverse areas were at sites 1 and 3. 15 species were collected at site 1 and 10 species were collected at site 3. Only a single species was collected at site 5.

It should be noted that the quality of an aquatic ecosystem can often be determined by the presence (or lack of) specific organisms. It was the conclusion of staff that water quality at sites 1 through 4 was fair to good. Site 5 was included to give indication of what lives in "man-made" ditches which are present throughout the park.

A complete listing of the aquatic organisms found in the field survey will be found at the end of this section as APPENDIX G. A supplemental list is also included in the field report covering those species not found but believed to be present at other times of the year. The supplemental list is from "Biological Assessment of the North Fork of Dogue Creek", prepared by Dr. Douglas P. Kelso, for Parson's, Brinckerhoff, Quade and Douglas, Inc.

J. Summary

The field findings of staff and others who have given major time and effort in assisting staff in the field activity, shows that Huntley Meadows Park is an area of major ecological and environmental importance, because of size, habitat, and wildlife diversity.

It is felt by the staff of the Conservation Division that the area should not be hidden from the public (i.e. "preserved") but rather should be available to the public through the creative and selective natural resource/recreational planning process.

Attachment A
Environmental Baseline Study

Huntley Meadows Park

PLANT LIST

The following is a composite listing of vegetation found in field surveys of Huntley Meadows Park, Fairfax County, Virginia. Reference for the family number, Family, Genus and Species is from Gray's Manual of Botany, Eighth Edition.

Lycopodium tristachyum	Clubmoss
Botrychium sp.	Grape Fern
B. virginanum	Rattlesnake Fern
Osmunda cinnamomea	Cinnamon Fern
O. Regalis	Royal Fern
Asplenium platyneuron	Ebony Stemmed Spleenwort
Arythria felix-femina	Lady Fern
Athyrium thelypteroides	Silvery Spleenwort
Dryopteris intermedia	Intermediate Wood Fern
Onoclea sensibilis	Sensitive Fern
Polystichum acrostichoides	Christman Fern
Pteridium aquilinum	Bracken Fern
Thelypteris noveboracensis	New York Fern
T. palustris	Marsh Fern
Pinus virginiana	Virginia Pine
P. echinata	Shortleaf Pine
P. strobus	White Pine
Juniperus virginiana	Red Cedar
Typha latifolia	Cattail
Alisma subcordatum	Water Plantain
Sagittaria latifolia	Broad-leaved Arrowhead

Agrostis sp.	
Anthoxanthum odoratum	
Danthonea spicata	
Fescue sp.	

(NOTE: 5 additional unknown genera also found but were unidentified)

Carex annectens	
C. caroliniana	
C. lurida	Chufa

(NOTE: 6 additional Carex species were found on site but were not identified as species.)

Eleocharis sp.	
Scirpus atrovirens	
S. subterminalis (?)	
S. sp.	Swaying Rush
Peltandra virginica	Arrow Arum
Arisaema triphyllum	Jack-in-the-pulpit
J. tenuis	
Allium canadense	Wild Garlic
Asparagus sp.	Wild Asparagus
Lilium superbum	Turks Cap Lily
Medeola virginiana	Indian Cucumber Root
Polygonatum biflorum	True Solomon's Seal
Smilax glaucum	Catbriar
S. rotundifolia	Greenbriar
Smilacina racemosa	False Solomon's Seal
Dioscorea villosa	Wild Yam
Iris sp.	Iris
Sisyrinchium angustifolium	Blue-eyed Grass

Cypripedium acaule	Pink Lady Slipper
Goodyera pubescens	Rattlesnake Plantain
Spiranthes cernua	Nodding Ladies Tresses
Habenaria lacera	Ragged Fringed Orchis
Corallorhiza maculata	Spotted Coral Root
Saururus cernuus	Lizard's Tail
Salix nigra	Black Willow
Populus grandidentata	Bigtooth Aspen
Juglans nigra	Black Walnut
Carya tomentosa	Mockernut Hickory
Betula nigra	River Birch
B. lutea	Yellow Birch
Corylus americana	American Hazelnut
Alnus rugosa	Speckled Alder
Fagus grandifolia	American Beech
Quercus alba	White Oak
Q. stellata	Post Oak
Q. muehlenbergii	Chinkapin Oak
Q. prinus	Chestnut Oak
Q. rubra	N. Red Oak
Q. velutina	Black Oak
Q. palustris	Pin Oak
Q. coccinea	Scarlet Oak
Q. Phellos	Willow Oak
Ulmus fulva	Slippery Elm
U. americana	American Elm
Maculura pomifera	Osage Orange
Boehmeria cylindrica	False Nettle
Urtica diocia	Stinging Nettle

Polygonum arifolium	Halbred Leaved Tearthumb
P. sagittatum	Arrow Leaved Tearthumb
P. pensylvanicum	Pinkweed
Rumex acetostella	Common Sorrel
R. crispus	Curly Dock
Phytolacca americana	Pokeweed
Claytonia virginiana	Spring Beauty
Dianthus armeria	Deptford Pink
Nuphar luteum	Spatterdock
Anemone quinquefolia	Wood Anemone
A. virginiana	Thimbleweed
Clematis sp.	Virgin's Bower
Ranunculus abortivus	Kidney Leaved Buttercup
Thalictrum polygamum	Tall Meadow Rue
Podophyllum peltatum	Mayapple
Liriodendron tulipifera	Tuliptree
Asimina triloba	Pawpaw
Lindera benzoin	Spicebush
Sassafras albidum	Sassafras
Cardamine bulbosa	Spring Cres
Barbarea vulgaris	Wintercress
Cardamine pratensis	Cuckoo Flower
Nasturium officinale	Watercress
Liquidamber styraciflum	Sweetgum
Spirea sp.	Spirea
Amelanchier laevis	Smooth Juneberry
Pyrus malus	Wild Apple
Fragaria virginiana	Wild Strawberry
Potentilla canadensis	Dwarf Cinquefoil

P. simplex	Common Cinquefoil
Geum canadense	White Avens
G. virginianum	Rough Avens
Rubus flagellaris	Dewberry
R. coronarius	Blackberry
Agrimonia sp.	Agrimony
Rosa carolina	Pasture Rose
Prunus serotina	Black Cherry
Cassia fasciculata	Partridge Pea
Trifolium arvense	Rabbits Foot Clover
T. dubium	Least Hop Clover
T. pratense	Red Clover
Robinia pseudoacacia	Black Locust
Desmodium cuspidatum	Large Bracted Tick Trefoil
D. tenuifolium	Tick Trefoil
Lespedeza procumbens	Trailing Bush Clover
L. virginica	Slender Bush Clover
Oxalis stricta	Wood Sorrel
Polygala sanquinea	Field Milkwort
Euphorbia corollata	Flowering Spurge
Callitriche sp.	Water Starwort
Rhus copalina	Dwarf Sumac
R. glabra	Smooth Sumac
R. radicans	Poison Ivy
Ilex opaca	Holly
Euonymus americanus	Euonymus
Acer rubrum	Red Maple
A. negundo	Box Elder
Impatiens capensis	Orange Jewelweed
I. Pallida	Jewelweed

Parthenocissus quinquefolia	Virginia Creeper
Vitis sp.	
Tilia americana	Basswood
Hypericum denticulatum	Coppery St. Johnswort
H. perforatum	St. Johnswort
Helianthum canadense	Frostweed
Viola papilionacea	Blue Violet
V. sagittata	Arrowleaved Violet
Nyssa salvatica	Blackgum
Circaea lutetiana canadensis	Enchanter's Nightshade
Ludwigia alternifolia	Seedbox
L. palustris	Water Purslane
Oenothera biennis	Evening Primrose
O. fruticosa	Sundrops
Aralia spinosa	Hercules Club
Cicuta maculata	Water Hemlock
Cryptotaenia canadensis	Honewort
Daucus carota	Wild Carrot
Cornus florida	Flowering Dogwood
C. amomum	Silky Dogwood
Chimaphila maculata	Spotted Wintergreen
Monotropa uniflora	Indian Pipe
Vaccinium corymbosum	High Bush Blueberry
Rhododendron nudiflorum	Wild Pink Azalea
Lysimachia ciliata	Fringed Loosestrife
L. quadrifolia	Whorled Loosestrife

Diospyros virginiana	Persimmon
Fraxinus americana	White Ash
Sabatia anularis	Rose Pink
Asclepias syriaca	Milkweed
A. tuberosa	Butterflyweed
Convolvulus sepium	Hedge Bindweed
C. spithamaeus	Upright Bindweed
Ipomea purpurea	Common Morning Glory
I. sp.	Morning Glory
I. pandurata	Wild Potato Vine
Cuscuta gronovii	Dodder
Phlox panicula	Garden Phlox
Collinsonia canadensis	Horse-balm
Lycopus americanus	Water Horehound
Mentha arvensis	Wild Mint
Prunella vulgaris	Heal All
Pycanthemum tenuifolium	Narrow Leaved Mt. Mint
Scutellaria integrifolia	Hyssop Skullcap
Solanum carolinum	Horse Nettle
Gerardia sp.	False Foxglove
Penstemon digitalis	Beardtongue
Verbascum thapsis	Common Mullein
Campsis radicans	Trumpet Creeper
Ruellia strepens	Smooth Ruellia
Plantago lanceolata	English Plantain

Cephalanthus occidentalis	Buttonbush
Galium asprellum	Rough Bdstraw
G. circaezans	Wild Licorice
G. triflorum	Fragrant Bedstraw
Houstonia caerulea	Bluets
Mitchella repens	Partridge Berry
Lonicera japonica	Japanese Honeysuckle
L. sempervirens	Trumpet Honeysuckle
Sambucus canadensis	Elderberry
Viburnum dentatum	Southern Arrowwood
Lobelia cardinalis	Cardinal Flower
Specularia perfoliata	Venus Looking Glass
Achillea millifolium	Yarrow
Ambrosia artemisiifolia	Ragweed
Antennaria neglecta	Pussytoes
Bidens aristosa	Tickseed Sunflower
Chrysanthemum leucanthemum	Oxeye Daisy
Circium pumilum	Pasture Thistle
Erigeron annuus	Daisy Fleabane
E. philadelphicus	Philadelphia Fleabane
Vernonia noveboracionus	Ironweed
Eupatorium perfoliatum	Boneset
E. pilosum	Hairy Throughwort
E. fistulosum	Joe Pye Weed
E. rotundifolium	Round Leaved Throughwort
Hieracium gronovii	Hairy Hawkweed
Lactuca canadensis	Wild Lettuce
Rudbeckia hirta	Blackeyed Susan
Senecio aureus	Golden Ragwort
Solidago altissima	Tall Goldenrod
S. patula	Round Leaved Goldenrod
S. rugosa	Rough Stemmed Goldenrod

ADDENDUM: The following additions should be made to the PLANT LIST of the "Environmental Baseline Study - Huntley Meadows Park". The additions were forwarded in January 1976 by Dr. Ted Bradley of George Mason Univeristy.

Eragrostis spectabilis	Tumble-Grass
Phragmites communis	Reed
Cinna arundinacea	Wood Reedgrass
Aristida dichotoma	Poverty-Grass
A. oligantha	
Leersia virginica	Cutgrass
Paspalum laeve	
P. floridanum	
Panicum agrostoides	Panic Grass
P. dichotomum	Panic Grass
Setaria glauca	Foxtail
S. faberi	
Erianthus giganteus	Woolly Beardgrass
Andropogon scoparius	Broom Beardgrass
A. virginicus	Broom-sedge
Sorghastrum nutans	Indian Grass
Carex lupulina	
Polygonum punctatum	Water-Smartweed
Desmodium marilandicum	Tick Trifoil
Lespedeza repens	Bush-Clover
L. violacea	Bush-Clover
Euphorbia supina	Milk-Purslane
Ilex verticilliata	Black Alder
Hypericum stragalum	St. John's-wort
H. gymnanthum	St. John's-wort

Lyonia ligustrina	Malebush
Leucothoe racemosa	Fetter-bush
Trichostema dichotomum	Bluecurls
Mimulus ringens	Monkey-flower
Agalinia purpurea	Gerardia
Heterotheca mariana	
Solidago nemoralis	Goldenrod
S. Elliottii	Goldenrod
Aster dumosus	Aster
A. solidagineus	Aster
A umbellatus	Aster
Helianthus strumosus	Sunflower
Bidens polylepis	Bur-Marigold

ATTACHMENT B

ENVIRONMENTAL BASELINE STUDY

HUNTLEY MEADOWS PARK

BIRD SURVEY LIST

The following listing of birds was compiled during the month of June, 1975 at Huntley Meadows Park, Fairfax County Park Authority, Fairfax County, Virginia. The listing is broken into three parts: A - those species observed by members of the Urban Wildlife Research Center; B - those species noted in addition to U.W.R.C. data during field trips by Barry Sperming, volunteer member of the survey group; and C - additional species noted by Bob Dittrick, District Naturalist, F.C.P.A.

A.

Green Heron
Red-shouldered Hawk
Bobwhite
Mourning Dove
Yellow-billed Cuckoo
Ruby-th. Hummingbird
Belted Kingfisher
Downy Woodpecker
Gr. crested Flycatcher
Acadian Flycatcher
Barn Swallow
Purple Martin
Blue Jay
Common Crow
Carolina Chickadee
Tufted Titmouse
Carolina Wren
Mockingbird
Br. Thrasher
Robin
Wood Thrush
Blue-Gray Gnatcatcher
Starling
White-eyed Vireo
Red-eyed Vireo
B & W Warbler
Prairie Warbler
Ovenbird
Kentucky Warbler
Yellowthroat
Yellow-breasted Chat
Orchard Oriole
Common Grackle
Br. headed Cowbird
Scarlet Tanager
Cardinal
Indigo Bunting
American Goldfinch
Rufous-s. Towhee
Field Sparrow

Attachment B continued

B	Turkey Vulture	Yellow Shafted Flicker
	Red-tailed Hawk	Red Bellied Woodpecker
	Sora Rail	Eastern Phoebe
	Chimney Swift	Red-winged Blackbird
	Black Billed Cuckoo	
C	Coopers Hawk	Hairy Woodpecker
	Turkey (track only)	Tree Swallow
	Woodcock	Parula Warbler
	Whip-poor-will	Black-poll Warbler
	Pileated Woodpecker	Song Sparrow

ATTACHMENT C.

ENVIRONMENTAL BASELINE STUDY

HUNTLEY MEADOWS PARK

MAMMAL LIST

The following mammals listed are expected to occur within the Huntley Meadows Park, Fairfax County Park Authority, Fairfax County, Virginia based on species range and the habitat requirements which are found within the park. The list was compiled by Paul Engman, District Naturalist, F.C.P.A. The listing also indicated certain species as being seen or otherwise identified as being present. Such indication is: S, Sighted; I, identified from unmistakable signs; E, expected because habitat, range and territory requirements are met.

Order Marsupialia		
Family Didelphiidae		
Species	Didelphis marsupialis	Opossum S
Order Insectivora		
Family Soricidae		
Species	Blarina brevicauda	Short-tailed Shrew S
	Cryptotis parva	Lease Shrew E
	Sorex cinereus	Masked Shrew E
Family Talpidae		
Species	Condylura cristata	Star-nosed Mole E
	Scalopus aquaticus	E. Mole I
Order Chiroptera		
Family Vespertilionidae		
Species	Eptesicus fuscus	Big Brown Bat E
	Lasiurus borealis	Red Bat E
	L. seminolus	Seminole Bat E
	Myotis Keeni	Keen's Myotis E
	M. Lucifugus	Little Brown Bat E
	Pipistrellus subflavus	Eastern Pipistrelle E
Order Lagomorpha		
Family Leporidae		
Species	Sylvilagus floridanus	E. Cottontail S

Attachment C continued

Order Rodentia		
Family Sciuridae		
Species	Glaucomys volans	S. Flying Squirrel E
	Marmota monax	Woodchuck I
	Sciurus carolinenis	Gray Squirrel S
	Tamias striatus	E. Chipmunk
	Tamiasciuus hudsonicus	Red Squirrel E
Family Cricetidae		
Species	Microtis pennsylvanicus	Meadow Vole S
	Ondatra zibethicus	Muskrat I
	Peromyscus leucopus	White-footed Mouse S
	Pitymys pinetorum	Pine Vole E
	Synaptomys cooperi	S. Bog Lemming E
	Clethrionomys gapperia	Boreal Redback Vole E
Family Castoridae *		
Species	Castor canadensis	Beaver I
Family Muridae		
Species	Mus musculus	House Mouse S
	Rattus norvegicus	Norway Rat E
Family Zapodidae		
Species	Zapus hudsonius	Meadow Jumping Mouse E
Order Carnivora		
Family Canidae		
Species	Vulpes Fulva	Red Fox I
	Urocyon cinereoargentens	Gray Fox S
Family Mustelidae		
Species	Mephitis mephitis	Striped Skunk S
	Mustela frenata	Longtail Weasel I
	M. vison	Mink I

*Utilized area in recent past, but not presently in park

Order Artiodactyla
Family Cervidae
Species Odoncoileus virginianus White-tailed Deer S

ATTACHMENT D

ENVIRONMENTAL BASELINE STUDY

HUNTLEY MEADOWS PARK

REPTILE LIST

The following is a listing of reptiles found in field surveys of Huntley Meadows Park, Fairfax County Park Authority, Fairfax County, Virginia. References cited for classification are: Conant, R., A Field Guide to Reptiles and Amphibians; and Mitchell, J.C. "The Snakes of Virginia", Virginia Wildlife. Primary responsibility for the identification of the reptiles was by Daniel James, District Naturalist, F.C.P.A. Revision of field notes for the purpose of this listing order was the responsibility of Gilman Aldridge, Chief Naturalist, F.C.P.A.

NOTE: Species marked* were seen in the field survey. Other species mentioned are reported in the literature as being present.

Family Chelydridae		
Species	Chelydra serpentina	Snapping Turtle
	Sternothaerus odoratus	Stinkpot
	*Kinosternon subrubrum subrubrum	Eastern Mud Turtle
Family Testudinadae		
Species	*Clemmys guttata	Spotted Turtle
	C. Insculpta (?)	Wood Turtle
	* Terrapene carolina carolina	Eastern Box Turtle
	Chrysemys picta picta	Eastern Painted Turtle
	Pseudemys cripta elegans	Red-eared Turtle
Family Iguanidae		
Species	Sceloporus undulatus hyacinthinus	N. Fence Lizard
Family Scincidae		
Species	Lygosoma laterale	Ground Skink
	Eumeces fasciatus	Five-lined Skink
	E. laticeps	Broad-headed Skink

Attachment D continued

Family Colubridae		
Species	Natrix sipedon sipedon	N. Water Snake
	N.septemvittata	Queen Snake
	Storeria dekayi dekayi	N. Brown Snake
	S. occipitomaculata occipitomaculata	N. Red-bellied Snake
	Thamnophis sirtalis sirtalis	E. Garter Snake
	*T. Sauritus sazritus	E. Ribbon Snake
	Haldea valeriae	Smooth Robbon Snake
	Heterodon platyrhinos	E. Hognose Snake
	Diadophis punctatus edwardsi	N. Ringneck Snake
	*Carphophis amoenus amoenus	E. Worm Snake
	*Coluber constrictor constrictor	N. Black Racer
	Opheodrys aestivus	Rough Green Snake
	Elaphe guttata guttata	Corn Snake
	*E. obsoleta obsoleta	Black Rat Snake
	Lampropeltis getulus getulus	Eastern Kingsnake
	L. doliata triangulum	Eastern Milk Snake
	L. calligaster rhombomaculata	Mole Snake
Family Viperidae		
Species	Agkistrodon contortrix mokeson	N. Copperhead

ATTACHMENT E

ENVIRONMENTAL BASELINE STUDY

HUNTLEY MEADOWS PARK

AMPHIBIAN LIST

The following list of amphibians was complied either from sightings or identifications of calls on Huntley Meadows Park, Fairfax County Park Authority, Fairfax County, Virginia, or from listings of amphibians which should be present due to proper habitat.

Shown also with the species is the suspected abundance illustrated as follows: x = rare; xx = common; xxx = very common; ? = not seen or heard but should be present.

Order Anura		
Family Bufonidae		
Species	Bufo americanus	American Toad XXX
	B. woodhousei fowleri	Fowler's Toad XXX
Family Hylidae		
Species	Acris c. crepitans	N. Cricket Frog XX
	Hyla cricifer	Spring Peeper XXX
	H. cinera	Green Treefrog ?
	H. versicolor	Gray Treefrog X
	Pseudacris triscriata ferianum	Upland Chorus Frog XXX
Family Ranidae		
Species	Rana clamitans melanota	Green Frog XXX
	R. pipiens	Leopard Frog XXX
	R. palustris	Pickeral Frog XXX
	R. sylvatica	Wood Frog XXX
Order Caudata		
Family Amoystomatidae		
Species	Ambystoma jeffersonianum	Jefferson Salamander ?
	A. maculatum	Spotted Salamander ?
	A. opacum	Marbled Salamander ?
	A. t. trigrinum	E. Tiger Salamander?

Attachment E continued

Family Salamandridae	
Species *Notophthalmus viridescens*	Red-spotted Newt ?
Plethodon c. cinereus	Red-backed Salamander ?
Hemidactylium scutatum	Four-toed Salamander ?
Pseudotriton m. montanus	E. Mud Salamander
Eurycea b. bislineata	N. Two-lined Salamander ?
E. longicauda guttolineata	Three-lined Salamander ?

ATTACHMENT F

ENVIRONMENTAL BASELINE STUDY

HUNTLEY MEADOWS PARK

AQUATIC ORGANISMS

The following is a listing of aquatic organisms collected at Huntley Meadows Park, Fairfax County Park Autority , Fairfax County, Virginia.

Phylum Mollusca	
Class Gastropoda	
Subclass Pulmonata	
Family Planorbidae	
Helisoma	Orb Snails
Class Pelecypoda	
Family Sphaeridae	Fingernail Clams
Phylum Arthropoda	
Class Crustacea	
Order Decapoda	
Family Astacidae	
Orconectes limosus	Cray ishes
Cambarus diogenes	
Class Insecta	
Order Ephemeroptera	
Family Heptageniidae	
Stenonema	Mayflies
Order Odonota	
Zygoptera	Damselflies
Anisoptera	Dragonflies
Family Aeshnidae	
Family Macromiidae	
Macromia	
Family Libellulidae	
Plathemis lydia	
Libellula insecta	
L. semifaciata	
L. cyanea	

Order Hemiptera	
Family Gerridae	Water Strider
Family Corixidae	Water Boatman
Family Notonectidae	Back Swimmers
Order Trichoptera	
Family Hydropsychidae	Caddisflies
Order Coleoptera	
Family Gyrinidae	
Dineutus	Whirligig Beetles
Family Dytiscidae	
Phylum Chordata	
Class Osteichthyes	
Order Salmoniformes	
Family Umbridae	
Umbra pygmaea	Eastern Mudminnow
Family Esocidae	
Esox sp.	Pickerel
Order Cypriniformes	
Family Cyprinidae	
Clinostomus funduloides	Rosyside Dace
Rhinichthys atratulus	Lacknosed Dace
Semotilus atromaculatus	Creek Chub
Family Catostomidae	
Catostomus commersoni	White Sucker
Erimyzon oblongus	Chubsucker
Order Perciformes	
Family Percidae	
Etheostoma sp.	Darter

APPENDIX B

HUNTLEY MEADOWS PARK - MASTER PLAN

PRELIMINARY INTERPRETIVE PLAN

Prepared by:
Division of Conservation
Fairfax County Park Authority
September 1976

PRELIMINARY INTERPRETIVE PLAN

HUNTLEY MEADOWS PARK

TABLE OF CONTENTS

PRELIMINARY INTERPRETIVE PLAN

HUNTLEY MEADOWS PARK

SECTION I

PROJECT OVERVIEW

A. Interpretive Planning

The interpretive planning process requires interface with:

- Agency goals and objectives
- Federal/State/County requirements and regulations
- Other agency division functions
- Academic community
- Citizen input/needs

The interpretive planning process provides:

- Information to the parent agency and interested citizens, about the goals and objectives of an interpretive program.
- Guidance to the division staff in the systematic design, development and implementation of a strong interpretive program.
- Input into the funding process to assure at the outset adequate staff, facilities, equipment, and maintenance of the project once begun.
- A systematic method for plan review process which allows continued input into the interpretive plan for upgrading and revising proposed actions prior to any implementation of such actions.

The interpretive plan for a designated park includes in addition to the aforementioned interface actions:

- Interpretive goals
- Natural and Cultural Resource Inventory (Baseline Study)
- Area Visitor Inventory and Analysis or Projected Visitor Use data.

- Area Values (designation of features which will have the greatest impact in the total program).
- Interpretive Themes (Program/operational "ideas" based on inventories)
- Interpretive Objectives (utilizing themes to reach the stated Interpretive Goals).
- Interpretive Programs and Outlines
- Implementation Program including those factors which have a direct relationship to budget needs.

B. Interpretive Planning Goals and Objectives

Goal 1: To assure through a comprehensive planning process that the recreational potential will be realized to the fullest extent possible, consistant with the existing environmental contraints--the conservation of those natural features of local and regional significance.

Objectives

- Maintain continuing input into the total Master Plan Process through such field research as may be deemed necessary.
- Develop sound plans for interpretive services, land use management and operational maintenance.
- Research and review the planning process (in total) assuring that proposed impacts are within limits of Federal and State standards.

Goal 2: To provide for the citizens of Fairfax County, and visitors to the county, a full program of interpretive/educational opportunities as they relate to basic Conservation Division policy.

- Implement on a phased development basis, interpretive, land use management and operational maintenance plans.
- Research potential funding (in part) for development.
- Obtain and maintain through normal channels, adequate funding to assure that implemented plans once started, may continue without adverse interruption.

Goal 3: To maintain a level of review, research, and related field activity to develop additional interpretive opportunities within the site.

PRELIMINARY INTERPRETIVE PLAN

HUNTLEY MEADOWS PARK

SECTION II

A. History

In 1975, the Fairfax County Park Authority, Fairfax County, Virginia, acquired from the Federal Government through the Legacy of Parks Program, a 1,262 acre parcel of land. Originally titled Hybla Valley Research Laboratory, the name was changed to Huntley Meadows Park by public contest.

The new name reflects both the historic and natural significance of the site. Historically the area was once a portion of the Huntley estate belonging to the Mason Family. The park is, in fact, in close proximity to the Huntley Mansion. Two large meadow areas within the park, formerly antenna fields, represent a portion of the diverse wildlife habitats within the park boundaries.

During 1974 and 1975 the Conservation Division of the Authority was assigned the responsibility of preparing a baseline inventory of the natural features of the park, and in part, providing an evaluation of the site based on that inventory. The data obtained during the field study process was forwarded to the Authority's Division of Design for use in preparation of base maps. Backup information to the field studies was obtained from several local academic areas. Information regarding soils and hydrology is currently being obtained from county sources outside the Authority.

B. Action to Date

The following actions have been taken to date by Conservation Division personnel with regards to the Master Plan/ Interpretive Plan Procedures:

- Field studies including biological inventory.
- Review of existing or available planning methodology and literature.
- Continued input to the Design Division, Fairfax County Park Authority, regarding baseline information.
- Staff participation in public hearings (1) and in meetings with special interest groups (3).

- Implementation of a planning matrix, "Inte. ive Operations Planning", developed by John Han. Texas A & M Univeristy.
- Implementation of a planning matrix develope(y H. J. Grove, Department of Recreation and Park Administrat. n, Clemson University
- Review of input from other sources within the uthority in the Master Planning Process.

C. Interpretive Goals and Objectives (Huntley Meadows Park)

Goal: Employing ecological concepts to create an awareness and appreciation of the value of open space; to illustrate the need for a diversity of habitat to maintain a diversity of wildlife; to demonstrate the interdependence of all living organisms; to develop an understanding of man's influence upon the natural world; and to stimulate the public conscience for the need of improved values (human) towards land stewardship and the resources contained therein.

Objectives

- Develop interpretive opportunities (programs/activities) for:
  1. the general public of Fairfax County and visitors to the county;
  2. special portions of the population including, in part, the academic community, handicapped groups, civic organizations, governmental groups dealing with land use management.
- Forward recommendations for facilities as required to implement the interpretive opportunities.
- Develop and implement a program in natural resource management, including resource manipulation practices required to maintain existing wildlife population habitats and enhance those habitats determined deficient.

D. Visitor Inventory and Analysis

Unlike an established and developed park with full operating facilities and "clientele", the visitor inventory and analysis for Huntley Meadows Park is limited. Information collected to date is based on past programs conducted by staff on the site,

and by informal conversations with park visitors while staff was on other assigned duties in the park. Supplemental information may be projected, based on the existing interpretive activities offered in established areas of the Authority system.

Program opportunities to date have been restricted to seasonal topics (ex. wildflower walks, early morning birding activity) and, also on a limited peak to environmental education, programs stressing wetland ecology. There has been further activity (also limited) by the academic community utilizing the site for selected research purposes. This latter activity is encouraged (governed by Authority policy) as the data received is utilized to supplement staff collected data. Such contact with citizens to date reflects primary use at present is by special interest groups and individuals.

It may be anticipated that with the development of interpretive facilities there will be a major increase in:

- school group visitation
- citizen (family group) use through walk-in visitation
- visitor use due to special offerings by division staff
- youth group utilization

E. Area Values

Certain key values have been determined for Huntley Meadows Park; such values in part being determined by comparison with other existing park sites. It is upon these values that future interpretive planning of opportunities/activities will take place:

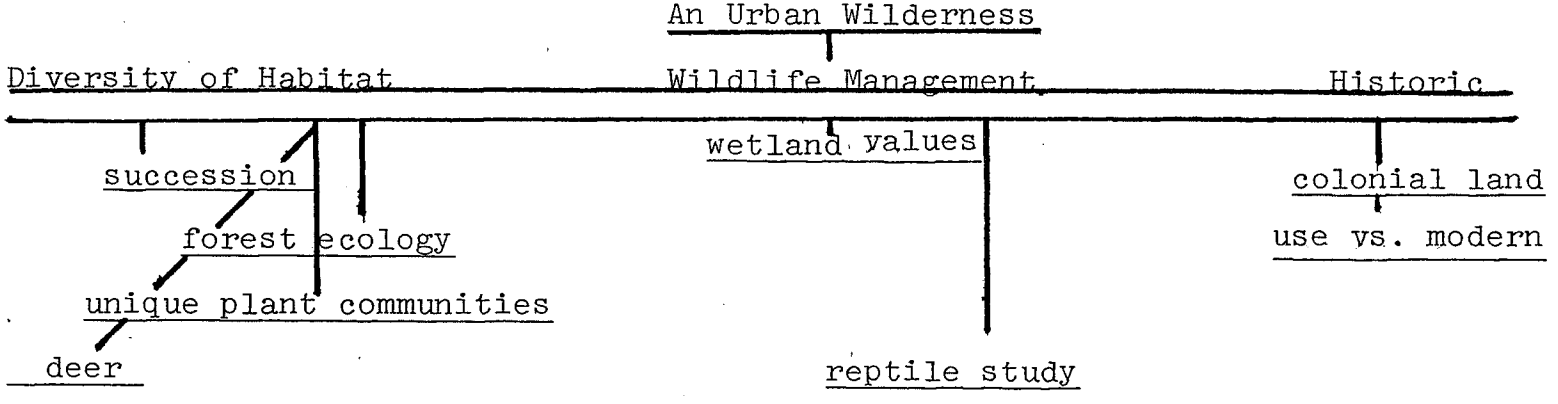
- diverse wildlife habitat
- diverse wildlife species
- extensive wetland area
- unique plant communities
- size
- historic
- potential for major interpretive opportunities/activities
- potential for major environmental education activities
- potential for major management practices to maintain and enhance wildlife habitat. Such practices can be utilized as demonstration areas for local land use planners concerned with open space and wildlife requirements.

* ° aesthetic
* ° solitude

* unmeasurable value but of equal importance

F. Interpretive Themes

The existing values of Huntley Meadows Park (excluding the stated potentials) provides the interpreter with a singular important theme--An Urban Wilderness. Nowhere else within the Fairfax County Park Authority system does this opportunity avail itself in the magnitude of Huntley Meadows. Based on this theme, numerous sub-themes may be developed as illusurated below:



The variety of sub-themes offers the interpretive staff an almost infinite variety of program opportunities to meet the Potential values stated. There can be both generalization and specialization in such programs meeting the needs and desires of our diverse population.

PRELIMINARY INTERPRETIVE PLAN

HUNTLEY MEADOWS PARK

SECTION III

STAFFING - FACILITIES - FUNDING

A. Considerations

Two major considerations have been made by staff in preparing proposals for the staffing, facilities and funding of an interpretive operation at Huntley Meadows Park.

1. The emphasis in the interpretation of Huntley Meadows Park will be made in the field situation (outdoors), not within a closed facility. Such emphasis is placed, due to observations of the staff, in current operations, and is also based upon changing views expressed by major national park agencies, i.e. National Park Service/ Canadian Park Service. It has been determined by these agencies, that visitors travel X miles to see a park, not to see a building in a natural park area. Facilities (buildings) do remain important for basic orientation, restrooms, staff requirements, but the bulk of interpretive monies should be placed in "the field", including staff time/salaries.

2. The physical characteristics, location and proposed uses to date fit well into the Bureau of Outdoor Recreation Land Use Classification System, in particular, Class II. A copy of that classification is attached in the appendix.

B. Staffing

The proposed staff requirements serve both an immediate need and long range need. To a degree, limitations in interpretive activity at present in Huntley Meadows Park is restrained due to other division naturalist district duties and requirements.

Huntley Meadows Park is currently located within Naturalist District III, which includes Mt. Vernon, Lee and Springfield Magisterial Districts. This district contains 4,629 acres, of which 3,033 acres are in major park facilities with major interpretive potential. Current staffing in the district (permanent assignment) is limited to a district naturalist (duties designated) and a naturalist position. Similar conditions are present in Naturalist Districts I and II.

Under existing staffing, it is impossible for staff to meet the full potential of interpretive opportunities.

An immediate proposal has been presented to staff that there be a fourth Naturalist District created, encompassing Lee and Mt. Vernon Districts alone. In the F.Y. 1978 operating budget, a request has been made for a position to serve this district. Such a position would be on a district naturalist level (assigned duties). The position would have major responsibilities towards development of a full interpretive program in the district with specific assignments towards implementation of minimal facilities in Huntley Meadows Park, required in the most basic interpretive program on the site.

As development progresses in Huntley Meadows, there would be a requirement for a naturalist position, a clerical position (for district level functions), two assistant naturalist positions (seasonal/part time) and two seasonal laborers. Staffing increases would be consistent with the phased development of the park, and increased interpretive programming throughout the district.

C. Facilities

The proposed facilities for interpretive operations are initially directed towards three major segments of the population:

1. Visitors desiring opportunities for self-interpretation (individuals, family groups).
2. Visitors desiring or expecting conducted activity (naturalist lead).
3. Highly structured activities such as Environmental Education opportunities with initial efforts (concentration) towards grades 4-6.

To be cost effective, multiple use of certain facilities must be considered especially in the use of buildings and trails.

Certain physical limitations have been determined with regards to the development of facilities on the site. Those limitations are marginal-to-poor soils for construction and a high water table over much of the park area. It is anticipated that these limitations will "dictate" certain facility locations and will increase construction costs.

The following facilities are deemed of major importance in full interpretive programming. They are listed by priority of need in establishing operations:

1. Trails: It is estimated that up to 10 miles of interpretive trails will be constructed in the park. In addition there must be access trails (neighborhood serving) and it has been proposed that biking trails and horse trails be included. With regards to the latter two trail types (use) it is imperative that such trails, if proposed within or near the managed conservation area, be closely reviewed (as should all trail construction) to minimize degrading effects on the primary designation of the area.

Trail construction will vary depending upon purpose, and the areas being traversed (habitat, soil types). It is proposed that a board walk trail be established into the marsh area. Such a trail would permit maximum interpretation of this fragile area without excessive environmental impact. It is also proposed that two handicapped trails be considered for construction, one for the ambulatory handicapped and the second for the visually handicapped. Such trails could also serve the non-handicapped.

Certain trail construction (possible access trails) should be considered with the secondary purpose of use by emergency equipment.

2. Wayside Exhibits: Wayside exhibits are proposed initially at major access points (pedestrian/biking/vehicle) to the park. Such exhibits would have a major purpose of keeping local citizens informed of park operations/activities, and serve as informational handout points (non-staffed) for park publications. Such exhibits further function as access control by directing visitor traffic along designated paths. Although it is desirable that such areas (exhibits) be low cost, it may be anticipated that individual unit costs may be $2,000 - $2,500 each, to provide vandal deterent construction.

3. Visitor Center: Proposed for construction is a small facility containing limited exhibit space, office space for staff, small reference library, storage area, public restroom facilities and limited work area. The estimated size of this structure would be approximately 2,600 square feet. In addition to the basic unit (building) it is proposed that contiguous to the main public area, a small auditorium/classroom area seating 100-150 persons be built. Total area of the building to be approximately 4,600 square feet. Parking for the facility is proposed at 50-75 cars, including bus parking areas. The facility should be designed for handicapped visitors.

It is intended that this facility not be called a nature/interpretive center. The center will serve as the primary source of contact for drive-in visitors to the park (controlled access), will be limited to the most basic interpretive displays, and will serve as the primary point of information/direction to other park points of interest (interpretive trails, etc.). The auditorium/classroom would be utilized for introductory programs (canned or live presentations) about the park, would serve as a "back-up" in the event of poor weather conditions, eliminating the need for program cancellation, and as a classroom for visiting school groups requiring temporary indoor facilities. The auditorium/classroom would also be utilized for staff conducted "enrichment" programs and special activities for the public. It might be further considered that the auditorium/classroom be made available for local civic groups usage on a space available/fee basis. Such latter use would be restricted to prevent impairment of the primary purpose of the facility, and fees would be based on staff coverage/utility costs.

4. Observation Platform: It is proposed that 1-2 low profile observation platforms be built in the vicinity of the marsh/meadow areas. Such platforms would have a capacity of 15-20 adults (load/space capactty). Platforms would have a primary purpose of wildlife observations, and would have as part of construction costs, projected, "wayside" exhibit areas. It is anticipated that such platforms would have a major appeal to individuals and small groups. Habitat management programs would be utilized to enhance visitor opportunities in wildlife observation.

5. Environmental Education Area: Although the major portion of Huntley Meadows Park might be considered as an Environmental Education Area, major questions remain at the present time regarding the desirability and feasibility for overnight programs.

However, it is recommended that an area be reserved for possible future construction of required facilities, and for intensive use by students in field study activities. The land base of 75-100 acres would allow the introduction of students to more environmentally critical areas of the park. Habitat manipulation within the area might be considered for use as intensive study plots. Management and control of the land base would remain with the Authority under the supervision and guidance of division personnel assigned to the park.

As an interim measure, it is suggested that within the area designated for possible future structures, temporary tent bases be established for overnight EE activity. Reservations for use would be controlled through joint effort for division/school system personnel. It might be further considered that this area, when not in use by the school system, be utilized by youth groups but only if the intent and purpose

of such outing experience was for environmental education.

Parking for the area would be in conjunction with the visitor center, reducing costs and impact.

D. Funding

Major development funds are dependent upon approval of the proposed CIP program, and upon funding from appropriate federal/state sources. Development funds also are anticipated for initial habitat improvement, including the purchase of equipment as might be required for continued maintenance.

Following development, operations funds will be from the General Fund.

Bibliography

Fairfax County Park Authority, "Baseline Environmental Study-Huntley Meadows Park", 1/76

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APPENDIX C

HUNTLEY MEADOWS PARK - MASTER PLAN

PRELIMINARY NATURAL RESOURCE MANAGEMENT PLAN

Prepared by:
Division of Conservation
Fairfax County Park Authority
November 1976

Natural Resource Management Plan
(Preliminary)

Huntley Meadows Park

ABSTRACT

The Natural Resource Management Plan (Preliminary) is the key element in the development of Huntley Meadows Park as a Managed Conservation Area. In this expanded approach to the master planning process, the interactions of man - land - and wildlife are carefully considered, and the natural resource itself becomes the focus of recreational activity.

The uniqueness of Huntley Meadows Park lies in the magnitude of its open space, its location adjacent to other undeveloped areas in a highly urbanized portion of the county, its high concentration of wildlife and its diversity of habitats.

Under the proposed Natural Resource Management Plan, certain modifications of the existing habitats are recommended. These proposals are consistent with recognized wildlife management techniques and are intended to increase the diversity and abundance of wildlife and, by making this resource more accessible to the public, enhance the recreational and educational benefits to the public.

Three habitat areas are proposed for management: Forest (approx. 1000 acres) Open area (approx. 70 acres) and Wetlands (approx. 88 acres). The preliminary plan includes, for each area, baseline information, the role of the specified type of management, goals and objectives, proposed techniques for habitat modification and cost estimates.

FOREST

Recommendations for management of the forest habitats are directed toward maintaining an uneven-aged forest (greater diversity of tree species), creating additional ecotones (edges between habitats) by clear cutting small areas and improving conifer stands and the general condition of hardwoods through selective cutting. Optimum locations for these actions will be carefully selected; regeneration alternatives for the clear cut areas include natural succession, planting of pine seedlings, and/or other suitable ground cover.

OPEN AREAS

The most critical habitat at this time, in terms of priorities, is the Open Area. During the last 15 years natural succession has reclaimed much of the existing meadow area and it is estimated that, without management, the meadows will totally disappear within 3 - 8 years. Considering that the name of the park reflects the attraction of this habitat and that only a very small percentage of other Fairfax County Park Authority parklands include meadow ecosystems, the need for management is essential.

The proposed management techniques for maintaining the open areas--release cutting and mowing--can be implemented by the Conservation Division and Park Operations staffs at a minimal cost. The establishment of food plots is also recommended to enhance the diversity and abundance of wildlife.

WETLANDS

Certain features of Huntley Meadows Park are highly conducive to wetland management, i.e., a high water table, flat topography, and soil types. The establishment of Inland Open Fresh Water areas (a major wetland type lacking on the site) would attract waterfowl to the park. Increasing the size of the existing marsh, planting browse areas, and establishing "green tree reservoirs" would provide additional food, cover, and nesting areas for many types of wildlife in addition to waterfowl.

The recommendations for wetland management are contingent upon a comprehensive hydrologic study. Alternative methods of water impoundment presented in the report would require the services of a professional engineering firm.

COST

The initial cost of implementing the Natural Resource Management Plan is estimated at $78,000, with a major portion of the funds directed toward wetland development. Annual maintenance costs are estimated at $6,250.

There are several potential sources of outside funding at the state and federal level; of equal importance is the availability of state-of-the-art technical assistance from governmental and private agencies.

The concept of natural resource management, or Managed Conservation Areas in urban parklands is relatively new but will gain increasing importance as development projects continue to obliterate wildlife habitats. The opportunity exists to make Huntley Meadows Park a prototype for sound natural resource management in urban parklands.

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Natural Resource Management Plan
(Preliminary)

Huntley Meadows Park
SECTION I

INTRODUCTION

The proposed Natural Resource Management Plan is the key element in the development of Huntley Meadows Park as a Managed Conservation Area. Both concepts represent an expanded approach to the master planning process of urban parklands.

Traditionally, management of Fairfax County Park Authority parks has been active-recreation oriented, focusing on the development and maintenance of facilities (marinas, campgrounds, apparatus/equipment) golf courses, tennis courts, and ballfields. In those sections of parklands designated "natural areas", the major alteration of the land has hitherto been the result of (1) unchecked natural (successional) processes and (2) uncontrolled (and often illegal) use by park visitors.

By contrast, a Natural Resource Management Plan addresses equitably each aspect of the man - land - wildlife triad and their interactions. It exemplifies to a high degree the philosophy of multiple use and assures an optimum park delivery system for those sites (Managed Conservation Areas) which contain:

- unique biotic communities
- areas of significant ecological/environmental importance to neighboring communities and the County
- areas with exceptional opportunities for passive recreation and natural history interpretation

The objectives of such a plan are to:

- determine compatible and non-compatible land uses
- set priorities for the development and maintenance of the resource base

- maintain and/or increase the diversity of habitats, and therefore of plant and animal species

- increase the educational and recreational value of the site by making wildlife more accessible to the public

- establish, to the extent possible, the recreational carrying capacity of the area and provide a criteria for maintaining the environmental quality of the site

The uniqueness of Huntley Meadows Park lies in the magnitude of its open space, its location adjacent to other undeveloped areas in a highly urbanized portion of the County, its high concentration of wildlife, and its diversity of habitats. All of these factors are interrelated and form the basis of the (Preliminary) Natural Resource Management Plan.

The recommendations contained in this report follow the principle of wildlife management which is defined as "the science and art of changing the characteristics of habitats, wild animal populations, and man in order to achieve specific human goals by means of the wildlife resource"1.

The Plan focuses on the improvement or creation of three major habitat areas within the park: forest (approximately 1000 acres), open areas (approximately 70 acres) and wetlands (approximately 88 acres). The significance of these diversified habitats at Huntley Meadows cannot be over-emphasized. As stated by Lynn A. Greenwalt, Director of the U.S. Fish and Wildlife Service, "the critical need of fish and wildlife today, the ingredient that is vital and at the same time more vulnerable than ever before is habitat--the places wild creatures live. Man--and especially we as managers and stewards of the resources entrusted to us by the public or our stockholders--must continue to exert influence over the natural process into which we long ago thrust ourselves".[2]

Sections of the report include, for each habitat area:

- baseline information (introduction)

- background and role of the specified type of management

1-R.H. Giles, Wildlife Management Techniques, 3rd Ed. Rev. The Wildlife Society Washington, D. C. 1971

2-Lynn A. Greenwalt, "Meeting Wildlife and Fisheries Needs", American Forestry Magazine, Vol. 82, No. 3, American Forestry Association, 1976.

- goals and objectives
- management proposals/specifics for habitat modification
- maintenance/cost estimates

Additionally, the Preliminary Plan contains a brief Impact Analysis and surveys potential sources of technical and funding assistance.

Unlike many management programs, the proposed Natural Resource Management Plan does not address consumptive uses of wildlife (hunting and fishing). The primary purpose is to conserve the natural resources of the site for the benefit of present and future generations, provide for optimum diversity of plant and animal species, and to provide increased recreation and educational opportunities for the citizens of Fairfax County.

If recreation can be defined as "the sense of being a part of a vast and mysterious whole"[3], then the primary output of the Natural Resource Management Plan, in combination with the Interpretive Plan, will be the long range impact on the park visitor. The true values of the site, and the success of the plans, will ultimately be measured in terms of human enjoyment.

Urban Wildlife Management will become an increasingly important part of park planning as the amount of open space dwindles. The opportunity exists to develop Huntley Meadows, the largest park in the county, as a prototype for natural resource management planning in urban parklands and to establish the Fairfax County Park Authority as a national leader in this new field.

3-Seymour Greben and David Gray, "Future Perspectives", National Congress of the National Recreation and Parks Association, October, 1973.

NATURAL RESOURCE MANAGEMENT PLAN

(Preliminary)

Huntley Meadows Park

Section II

FOREST MANAGEMENT

"Conservation is a state of harmony between men and land." Aldo Leopold, A Sand County Almanac

A. INTRODUCTION

Huntley Meadows Park contains 1,262 ± acres, of which approximately 1,000 acres may be considered forest habitat. These forested acres contain the following general habitat types:

- mature hardwoods
- immature hardwoods
- mixed hardwood and conifers
- pure conifers

as well as various stands of sub-climax forest in different stages of forest succession.

Presently the forested areas, in association with the meadow areas and wetland areas, provide the necessary food, water, and cover requirements of many wildlife species in Huntley Meadows Park. The maintenance activities of the prior land owner (U.S. Navy) created many ecotones (edges between major habitat types) and different forest habitat types, - desirable wildlife conditions.

Unless a management plan is established to maintain and improve forest conditions for wildlife at Huntley Maadows, natural succession processes will eventually create a relatively homogeneous climax forest of oak and hickory throughout the park. Coincidental with the gradual disappearance of forest types will be the disappearance of wildlife diversity and abundance.

The Preliminary Natural Resource Management Plan for Huntley Meadows Park,

of which this Forest Management Plan is an integral part, will work to achieve maximum habitat diversity and subsequent wildlife species diversity and numbers. Ultimately this will provide the park visitor with a better outdoor experience through increased non-consumptive passive recreational opportunities.

B. BACKGROUND - THE ROLE OF FOREST MANAGEMENT

Timber or forest management, with the various silvicultural techniques associated with the profession, has long been considered a successful tool for wildlife as well as tree production. "In general,...greater densities of game and fur bearers can be raised on land where forestry in some form is practiced."[1]

Research has shown that openings (small clearcuts) in the forest benefit many wildlife species by providing necessary grasses and shrubs for food and nesting cover. In addition, many various operations conducted in the forest such as thinnings, cleanings, prunings, and selective cuttings can provide much needed browse, nut (mast) crops, or escape cover for wildlife.

Contempory philosophies for improving wildlife endorse managing by habitats-restoring a habitat so a species may be introduced, or maximizing the carrying capacity (number of a particular animal species that an area can support at any given time) for an already established species. The habitat should be managed to accomodate the maximum beneficial number of game and non-game species. To achieve this end the habitat must include:

- nutritious food available all seasons
- suitable cover
- favorable interspersion of food and cover within ranges of the animals.

Forest Management texts suggest that 10-15% of the entire forest area be left open (non-forested) if the production of wildlife is a high priority.

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[1]R.E. Trippensee, Wildlife Management, Volunme I, New York: McGraw-Hill Book Company, 1948, p. 145.

Management proposals designed to maintain the two large meadow areas, plus the five existing easements and several small fields located in the park, will satisfy this open space requirement. Therefore, no large cuts are recommended in the forested areas. However, thick stands of pure hardwoods or conifers are likely to be less desirable for wildlife than mixed stands so small openings in homogeneous forest types are recommended to provide needed edges and eventually different age classes in the forest.

Proper Forest-Wildlife Management exphasizes maximum populations of animals without waste (disease, starvation), without unduly suppressing other necessary habitat features, or without sacrifice of other multiple use objectives.

C. GOALS AND OBJECTIVES

The general goals of the Forest Manager are two-fold:

1. He strives to meet the multiple needs of the species (or species groups) under management as nearly as he can and in as small a space as possible.

2. He also works to convert non-producing or blank areas into producing area.

In order to achieve these broad based goals for Huntley Meadows Park, it will be necessary to maintain and improve the diversity of age classes, and manage for an uneven aged forest. 25% saplings, 25% pole timber (D.B.H. of 4-8 inches), and 50% mature trees in optimum diversity for wildlife. In addition more food, open water, and cover must be made available in the forest, especially in the areas of the park south of the open meadows where immature and mature hardwood forest is the dominant cover type.

1 Goal

Provide ecotones (forest edges) and open areas in the hardwood forest south of the large open areas.

Objectives

. Select 3 one acre size areas in the mature hardwood forest and girdle (remove bark in a ring circumscribing the tree) all the trees. Leave standing.

. Clearcut 3 one acre size areas of immature hardwood. Select immature

stands where Red Maple (sprouts provide good deer browse).

. Build brush piles along the edge of open areas.

2 Goal

Improve the general stand condition of the hardwood forest south of the large open areas.

Objectives

. Thin stands to encourage a variety of mast species (oak, hickory, beech, gum, dogwood).

. Thin overstory to promote growth and vigor in the crown of mast species.

. Hygrade (selectively cut) certain mature, non-den trees in hardwood forest south of large open areas to create small openings in canopy to allow for the growth of grasses and shrubs in the forest floor.

. Girdle mature non-mast producing trees (not more than 2 trees/acre) throughout hardwood forest to provide food for insect eating birds, future den trees, and openings in the canopy to the forest floor.

3 Goal

Provide a small open water habitat in the immature forest east of the large open area (see attachment A).

Objectives

. Build an earthen impoundment on the ditch which drains the large open area to the east.

. Create a depression behind the impoundment to hold the water, and provide for an overflow spillway returning to the ditch the excess water.

. Remove standing vegetation in depression.

4 Goal

Improve coniferous stands to provide resting, nesting and escape cover for deer, songbirds, small mammals, etc.

Objectives:

. Selectively remove invading hardwoods from pine stands in northeast section of park.

. Thin dense stands of conifers to encourage growth of shrubs and vines, a process beneficial to wildlife.

D. MANAGEMENT PROPOSALS/SPECIFICS

1. Selecting Forest Management sites.

Improvement cuttings have been recommended throughout the forested areas of Huntley Meadows to upgrade the quality and composition of these habitats generally for wildlife. Openings in the forest are also recommended, but several factors must be taken into account before actual clearing or cutting takes place.

. Positive and negative impact of the proposed habitat change must be accurately measured.

. Forest openings requiring periodic maintenance must be located in areas where heavy machinery can gain access.

. Habitat changes should be properly interspersed with other habitats in the park in such a way that the food, water and cover needs of major wildlife groups can be met within their average daily range.

. Forest openings should be rectangular rather than square in shape, to provide for the maximum edge effect.

. Forest openings should be located near visitor concentration points (trails, observation blinds, Visitor Center, etc.) to allow for greater visibility for wildlife.

The operation of thinning the forest stand is based on several criteria. In dense stands, non-mast producing species such as Tulip trees, Big-toothed Aspen and Sweet Gum should be selected against. Red Maple should be cut whenever feasible to provide high deer browse (stump sprouts). Trees with poor form, disease or insect infestations, and those crowding mast producing species should be removed or girdled, depending upon size. Large, over-mature trees with diminishing mast producing potential should be girdled.

2. Regeneration Alternatives

Six one acre openings are recommended in the initial forest management plan. The creation of open areas in the forest resets the succession cycle. If natural succession is allowed to take place in the openings; grasses, shrubs, vines and eventually sun tolerant trees will invade.

An alternative to natural regeneration is planting pine seedlings. Openings planted to pine in the southern section of the park will provide necessary cover requirements for wildlife in the open hardwood forests.

Clovers such as Alsike or Dutch White should be planted in small forest openings with minimal site preparation. These legumes provide excellent wildlife food and are perennial, eliminating the need to prepare and plant the site annually. Korean Lespedeza is also good wildlife food which can be planted in poor soil. The Virginia Commission of Game and Inland Fisheries provides an excellent Game Bird Food Mixture, attractive to a variety of wildlife species. Discing with subsequent broadcasting of seed is the recommended procedure for planting clovers, lespedza, and Game Bird Food Mixtures.

It is recommended that any openings in the forest resulting from girdling operations be allowed to succeed naturally. It is further recommended that one mature mast producing species be left inside the girdling operations to provide the necessary seed production for regeneration.

In immature stands where clearcuts take place, artificial regeneration is recommended. One of every three clearcuts opened should be replanted to pine, the remaining two being planted to clovers, lespedeza, game bird mixture or possible a heat crop such as corn or soybeans.

3. Impoundment criteria - Management Specifics

To meet the objective of creating open water in the forest area, it is proposed

that an existing drainage ditch be closed, and that a low impoundment structure be created, not to exceed 1 surface acre in size. The primary purpose of this structure is not for waterfowl habitat enhancement but rather to provide an open water area for forest and other resident species.

The creation of such an impoundment must consider:

- Wildlife needs
- Downstream interests
- Public safety

As in the recommendations for Wetlands Management (Section IV), the proposed area must be shallow (maximum depth of 3.0'). Such depth would be created through excavation to an elevation of 33.0' above sea level (a.s.l.). Through construction of a "dam" not to exceed 37' a.s.l., the permanent pool would be maintained at a level of 36' a.s.l. Provisions should be provided for release of additional water should the area be subjected to heavy, prolonged rains.

Prior to implementation, this proposal must be subjected to review in a hydrologic/soils study to assure feasibility. Such a study should be carried out in conjunction with the study required in the Wetlands Management Plan (Proposed).

E. MAINTENANCE

Once the objectives of Forest Management have been achieved, maintenance is usually required. Openings in the forest will succeed from grasses and vines, to shrubs, pines and eventually mature hardwoods. The forested areas generally require periodic maintenance to eliminate undesirable species competition with the mast producers, and to ensure the existence of an uneven aged forest with various cover types. The open water area recommended in the forest will require maintenance on the impoundment structure, as well as maintenance to ensure the desired depth and size of the pool itself.

Following the regeneration efforts in forest clearcuts, no maintenance should be performed on these areas. Instead, new openings should be made in the forest every other year, allowing old cuts to succeed naturally. This procedure will ensure the conversion of the forest to uneven aged stands with mixed species composition.

Thinning and girdling operations should take place in the forest during the years when no clearcuts are going to be made. Because the sale of forest products is not a consideration at present, thinning operations should only take place in areas where wildlife will derive the maximim benefit. No forest cuts of any type should occur between March 1 and August 1, when birds and mammals are bringing off their young.

It is recommended that emergent and other invading plant life be removed from the open water areas every three years. This is to ensure that vegetative succession does not eventually fill in the impoundment. Such clearing can be done by hand, and it is further recommended that such activity be conducted by youth organizations under the supervision of the Naturalist Staff. Funding for such supervision would be through funding for normal staff services.

Annual maintenance costs for Forest Management is a part of the General Operating (01) Budget of the Park Operations (specifically Forestry and District crews) and the Conservation Division. Justifications should be made in the budget each year for man-power, tools, and equipment to perform management practices in the forests of Huntley Meadows.

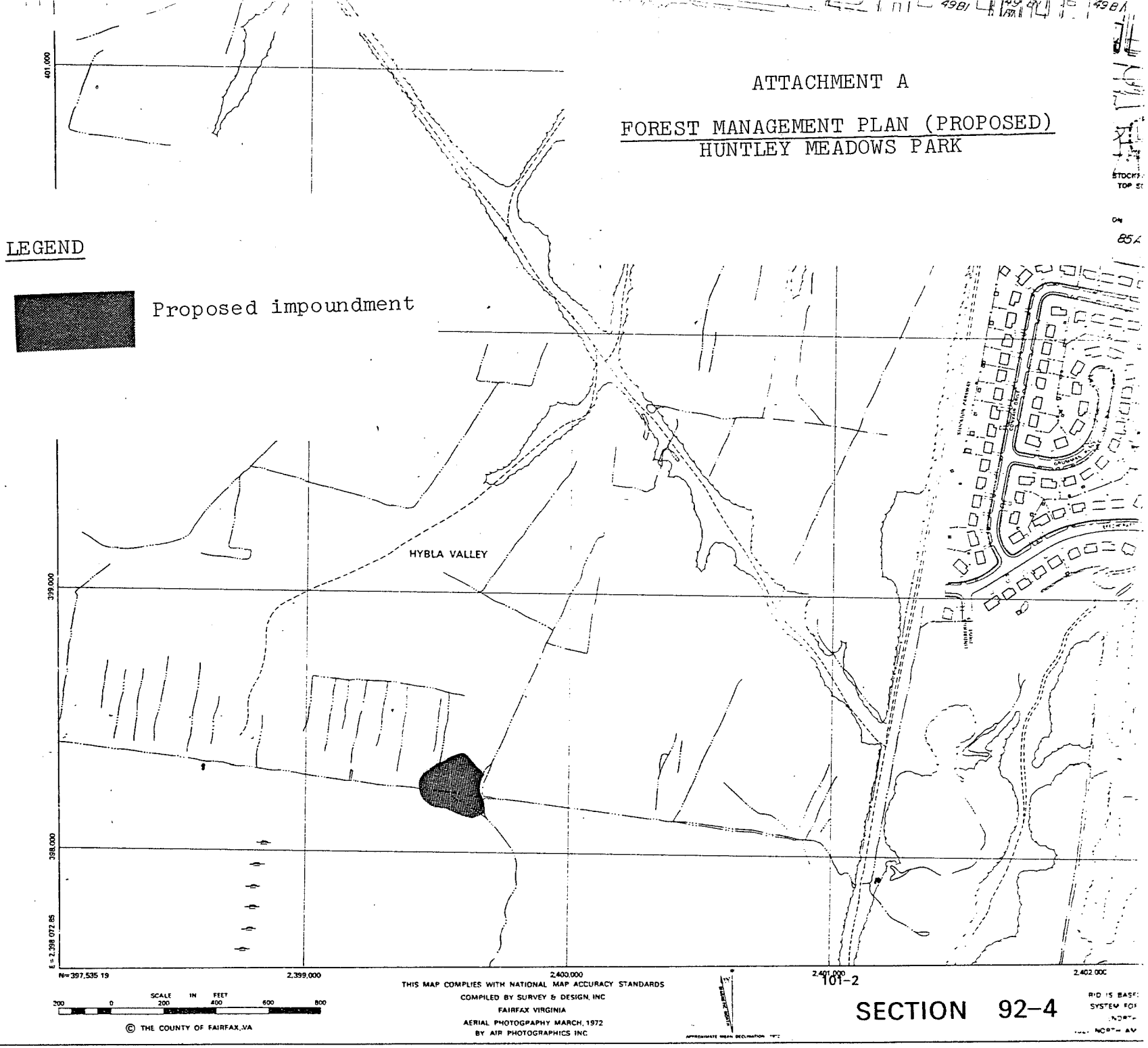
Tables 1 and 2 illustrate the maintenance costs, both necessary to carry out the major Forest Management objectives outlined in this section. The use of volunteers (including scout groups) will help decrease the maintenance costs.

F. CONCLUSION

Presently the forested portions of Huntley Meadows represent a diversity of stand age classes and a good mixture of species types. However, this desirable combination is of a temporary nature due to the natural succession phenomenon, which would eventually develop mature hardwood conditions throughout the forest. The proposals set forth in the Forest Management Plan will ensure the necessary forest diversity conditions favorable to wildlife. Land Management texts stress the need to first identify the most important or critical use of the resource, and then develop a sound management plan based on the resource requirements. The Forest Management Plan, together with the Wetlands and Open Areas Management Plan, will satisfy the need to improve the diversity and abundance of wildlife, the major resource identified for Huntley Meadows Park.

ATTACHMENT A

FOREST MANAGEMENT PLAN (PROPOSED)
HUNTLEY MEADOWS PARK



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SECTION 92-4

FOREST MANAGEMENT PLAN (PROPOSED)

HUNTLEY MEADOWS PARK

ATTACHMENT C

Table 2

Estimation of major Forest Management job costs, expressed in dollars per acre.

	Site selection marking supervision	Clearcut	Thinning	Girdling	Site Prep.	Planting
Forestry crew		100-200	25-50	10-15		
Operations crew					16	
Naturalist Staff	900					30
Bushog		28			28	
Cherry-picker	300-600	75-150	30-60			
Tractor-disc					28	
Pick-up truck		140-280	35-70	14-28	28	35
Chain saw		40-80	10-20	4-8		

FOREST MANAGEMENT PLAN (PROPOSED)

HUNTLEY MEADOWS PARK

ATTACHMENT B

Table 1

Estimation of maintenance costs of major personnel and equipment to be utilized in Forest Management at Huntley Meadows Park. Expressed in dollars per hour.

Forestry crew - man hour	5.0
Operations crew - man hour	4.0
District Naturalist	7.5
Naturalist I	6.0
Seasonal Naturalist	3.3
Bushog	7.0
Cherry-picker	15.0
Tractor-disc	7.0
Pick-up truck	7.0
Chain saw	2.0

NATURAL RESOURCE MANAGEMENT PLAN

(Preliminary)

Huntley Meadows Park

Section III

OPEN AREA MANAGEMENT

A. INTRODUCTION

Huntley Meadows Park has been identified as having considerable natural history significance to the citizens of Fairfax County. Baseline data collected to date references the unique character of the park, its large size, location adjacent to other undeveloped lands and high concentrations of wildlife as important qualities to be noted. One of the foremost unique characteristics of the park is the presence of large meadows. This is significant since only a small percentage of the land held under public ownership in Fairfax County is of this type. The typical homogeneous woodland park is valuable, but by itself does not provide the wildlife and interpretive potential of combined woodland and meadows such as occur in Huntley Meadows.

The name given the park indicates the emphasis placed upon these natural features, specifically the meadows. In order to protect the character and integrity of the park it is necessary to develop a management plan for the open areas. Natural succession has, in the last 15 years, reclaimed much of the existing meadow area and will in the next few years turn the area into an immature forest. Much of the unique character of the park would then be lost and any attempted recovery techniques would be increasingly costly. For this reason, as well as to improve the recreational, interpretive and wildlife potential of the park, the following recommendations for open area management are presented.

B. BACKGROUND - ROLE OF OPEN AREA MANAGEMENT

The open areas contained within Huntley Meadows are of four basic types:

Open Fresh Meadow (4 acres)
Upland Meadow (20 acres)

Easement and Roadsides (15 acres)
Sere areas (25 acres)

Since these are the only areas to be considered in this section of the report a brief description of each is warranted.

Open Fresh Meadow: This is one of the wetland types classified by the U.S. Fish and Wildlife Service: without standing water during the growing season but waterlogged to within a few inches of the surface; characterized by the growth of grasses, sedges, rushes, and certain broadleaf woody plants. Open fresh meadows comprise less than 10% of the managed open area within the park.

Upland Meadow: Open area consisting of well drained soils on which grow any number of native or cultivated grasses and other herbaceous materials. In later stages natural succession leads to invasion of woody plants.

Easements and Roadsides: Linear areas which are periodically maintained (mowed) and comprised of low herbaceous vegetation either native or cultivated. Presence of woody plants dependent upon mowing schedules

Sere Areas: Those open areas which are in any one of several successional stages between meadow and forest. Generally in direct association with the next older stage (i.e. edge).

The management of open areas in based in three major principles:

1. Natural communities are constantly going through directional change (succession).

2. The key to wildlife abundance is the maintenance and manipulation of habitats.

3. Proper management in accordance with the above principles will result in a better recreational/interpretive product for the park visitor.

The process of natural succession demonstrates the need for a management plan in the park. Directional change is currently taking place and Huntley Meadows will revert to shrub and forest land unless the succession is controlled. Investigations of aerial photographs taken in the late 1950's show the meadow areas being maintained (mowed). Recent field investigations show that approximately 75% has reverted to some type of woody cover. The majority of invading trees are between 6-8 years old. The following chart has been developed from this information:

Years	Dominant Vegetation	Height of Vegetation
0-5	Herbaceous	0-3 feet
6-7	Mixed herbs, and woody plants	3-5 feet
8-present	Woody plants	6-15 feet

This information is supported by the literature: "Years 4 to 9 - This period is noteworthy for the rapid development of shrub growth and some trees. Years 10 to 17 - Just as shrubbery became conspicuous in the preceding period, so do the forest trees become predominant in this succession stage."[1] From this it can be predicted that disappearance of the meadow will occur within the next 3-8 years unless management techniques are instigated.

The second principle (concerning abundance) indicates that not only can the open areas be maintained but also that is is feasible to increase wildlife potentials of the area at the same time. If the maintenance program involved rotational mowing, for example, a diversity of successional areas will be created. The result will be a greater diversity of wildlife within the park. Similar results can be achieved by providing a series of small (1/2 - 1 acre) openings throughout the park. These techniques provide food and cover requirements for many different species. See attachment B1, B2.

[1] W.B. Grange, The Way to Game Abundance, New York: Schribner's and Sons, 1949, pp 78-79.

C. GOALS AND OBJECTIVES

The following goals and objectives apply to the existing meadow areas, easements, roadsides, and to selected areas of advanced successional growth which once were pastureland. See attachments A1, A2.

1 Goal- Maintain Open Areas

Objective: Implement appropriate thinning and clearing techniques for woody plants to allow for herbaceous growth and access by machinery.

Objective: Develop a mowing schedule to prevent invasion by woody plants in selected areas.

Objective: Intersperse openings in such a way as to encourage maximum wildlife and human usage.

2 Goal- Increase Wildlife Diversity and Abundance

Objective: Implement techniques to encourage the diversification of plant species and successional stages.

Objective: Provide for a diversity of density for plant species and successional stages.

Objective: Establish artificial nesting and breeding sites for selected species and groups of species.

3 Goal- Increase the Interpretive Potential of the Open Area

Objective: Develop techniques to make wildlife more accessible and visible.

Objective: Achieve maximum sustainable population of selected species (carrying capacity).

Objective: Develop and implement an interpretive plan to highlight the unique character of the open areas.

D. MANAGEMENT PROPOSALS SPECIFICS

The desired management of open areas at Huntley Meadows Park can be achieved by meeting the stated goals and objectives. These operations can be carried out with the combined efforts of the Park Operations and Conservation Divisions at minimal cost. Specific techniques and recommendations are described below:

1. Release Cutting: The shaded areas shown on attachment A1, A2 should be maintained by release cutting and/or mowing. The principle of "release" is to cut the woody growth in order to allow sunlight to reach ground level. This, in turn, perpetuates field-type growth of herbaceous plants. The felled trees can be stacked to provide excellent cover for wildlife. The technique also provides access for mowing machinery. "Release" requires very little special equipment and can be done by two or three individuals. In some cases herbicides are used to prevent "sprouting" of the stumps. The herbicide is applied directly to selected stumps and is completely safe when used properly.

2. Mowing: Mowing will require use of a tractor and bush-hog mower. An area mowed once each year, or every other year, will remain in the desired herbaceous cover. This maintenance can be flexibly implemented during non-nesting seasons to minimize wildlife disturbance. The mowing provided by the Fairfax County Park Authority will be supplemental to that on easements provided by public works and the utility companies. Initial contact with representatives of these groups indicate a willingness to coordinate schedules in order to be compatible with the management plan. The mowing provided by the Fairfax County Park Authority will be done by the Operations Division in cooperation with the Conservation Division. Approximately 5-10 acres will be maintained as open meadow with the remainder to be interspersed with 30 yard wide strips with 5 yard wide corridors of unmowed areas between each strip. The following shows the estimated costs of the initial (first year) mowing and release.

Release cutting-	6 acres	@ $184/acre	= $1,104
Mowing -	32 acres	@ $102/acre	= $3,264
		Total	$4,368

The $102/acre figure assumes that it would take 8 hours to mow one acre (including equipment transportation, flagging, supervision, etc.).

The machinery would cost $7/hour or	$ 56
The operator would cost $4/hour or	32
Supervision of 2 hours would be at $7/hour or	14
Total	$102

The $184/acre figure assumes that two men could clear 1/2 acre per day.

Labor would cost $8/hour x 16 hours or	$128
Supervision of 8 hours would be at $7/hour or	56
Total	$184

3. Planting: The establishment of food plots will help increase the wildlife population both for those species directly limited by such food availability (rodents, songbirds, rabbits, etc.) and those who prey upon these animals (foxes, weasels, hawks, owls, etc.). Selected areas of approximately 1/2 acre in size will be planted with seed mixtures formulated especially for wildlife (available without charge from the Commission of Game and Inland Fisheries). The areas will be disced and seed broadcast by hand. The food plots require little maintenance and are effective for at least two years. In addition several similar plots of clover (Lespedeza striata and/or Trifolium virginiaum) would be provided. Total cost for five plots would be $250 assuming the same equipment and labor costs previously mentioned.

4. Nesting: Although this plan is not intended to be species specific, some special breeding and nesting sites for particular animals will be provided. Examples include nesting sites for waterfowl, songbirds, birds of prey, rabbits, etc. Also breeding plots of 1/4 acre grass would be established for the woodcock population. The fresh meadow area would be protected as breeding grounds for selected reptiles and amphibians.

5. Visitor Use: The scope of the open area management plan is not limited solely to natural history. The habitat manipulations will also be utilized to meet the passive recreational and interpretive objectives for the park. The corridors will be excellent areas for birding, photography, hiking, etc. The openings will be logical sites to construct wayside exhibits explaining the natural resource management plans. The actual interpretation of the park is more specifically referenced in the "Interpretive Operations Plan".

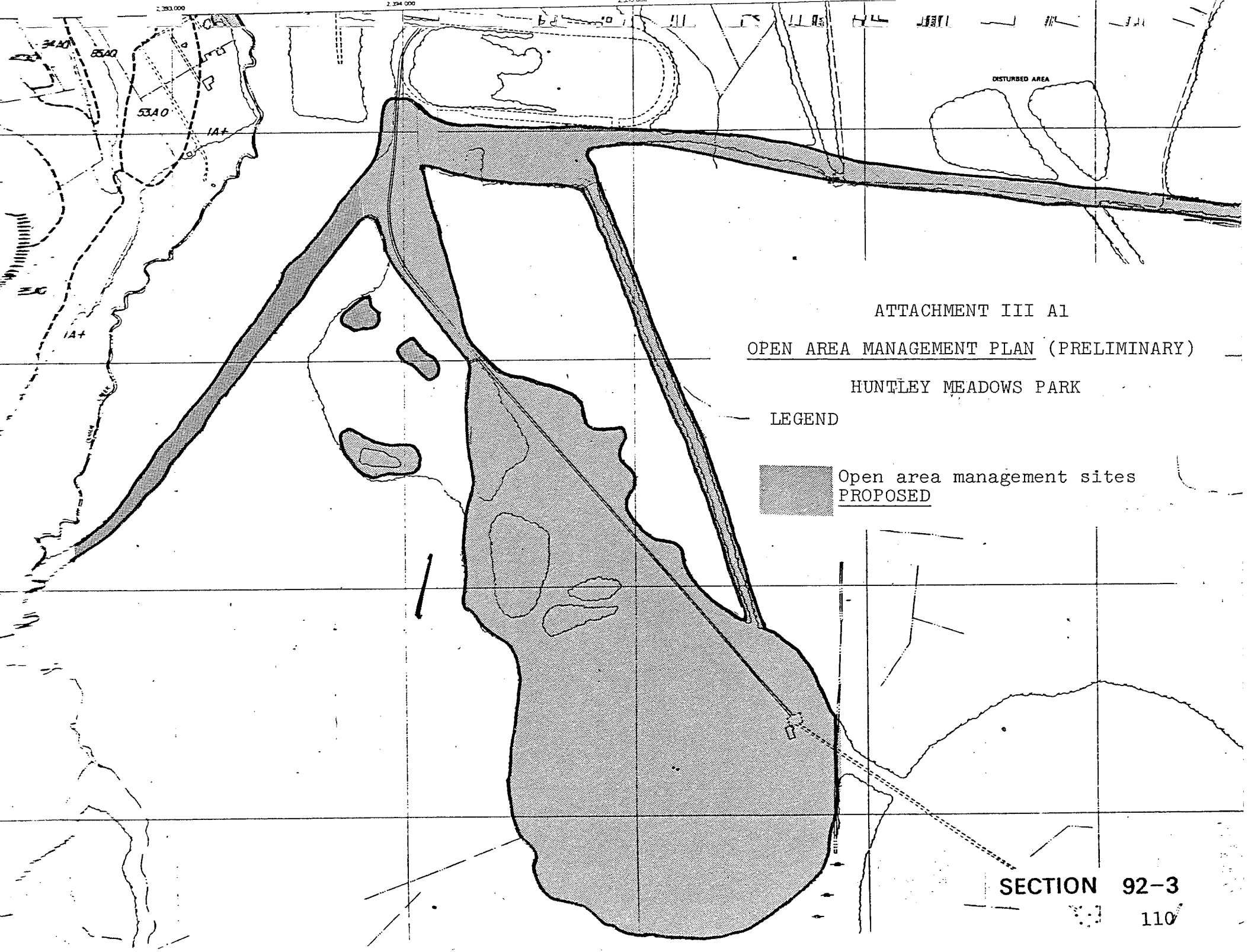
E. MAINTENANCE

The annual maintenance for this section of the management plan will be carried out according to the specifications previously outlined. Approximately one-half of the existing open areas (16 acres) will be mowed each year. This does not include the periodic easement maintenance provided by the utility companies and public works, although a cooperative agreement on when these should be mowed is feasible. In addition approximately 6 acres of release cutting will be necessary each year. The food plots will also require some periodic maintenance and replacement. Although it is not, at this time, possible to estimate all cost factors some miscellaneous expenses such as nesting boxes, brush piles, selective plantings, fine mowing, fire road maintenance etc. can be predicted. Some of the costs can be minimized by use of volunteer labor (scout troops, garden clubs, etc.). The following is estimated annual maintenance figures for the openland management plan.

1.	Release Cutting (6 acres)	$1,000
2.	Mowing (16 acres)	1,500
3.	Plantings	200
4.	Miscellaneous	500
	Total	$3,200

F. CONCLUSION

Huntley Meadows Park contains unique natural features of value. By their nature, however, these features require maintenance. The open area management plan attempts to provide for the perpetuation and diversification of some of these features through cutting, mowing and planting. The results will benefit the recreational, interpretive and wildlife potential of the park. It is necessary that the maintenance be continuous, on-going and constantly evaluated and revised. The integrity and character of the park is dependent upon the quality of the resource management provided it.



ATTACHMENT III A1

OPEN AREA MANAGEMENT PLAN (PRELIMINARY)

HUNTLEY MEADOWS PARK

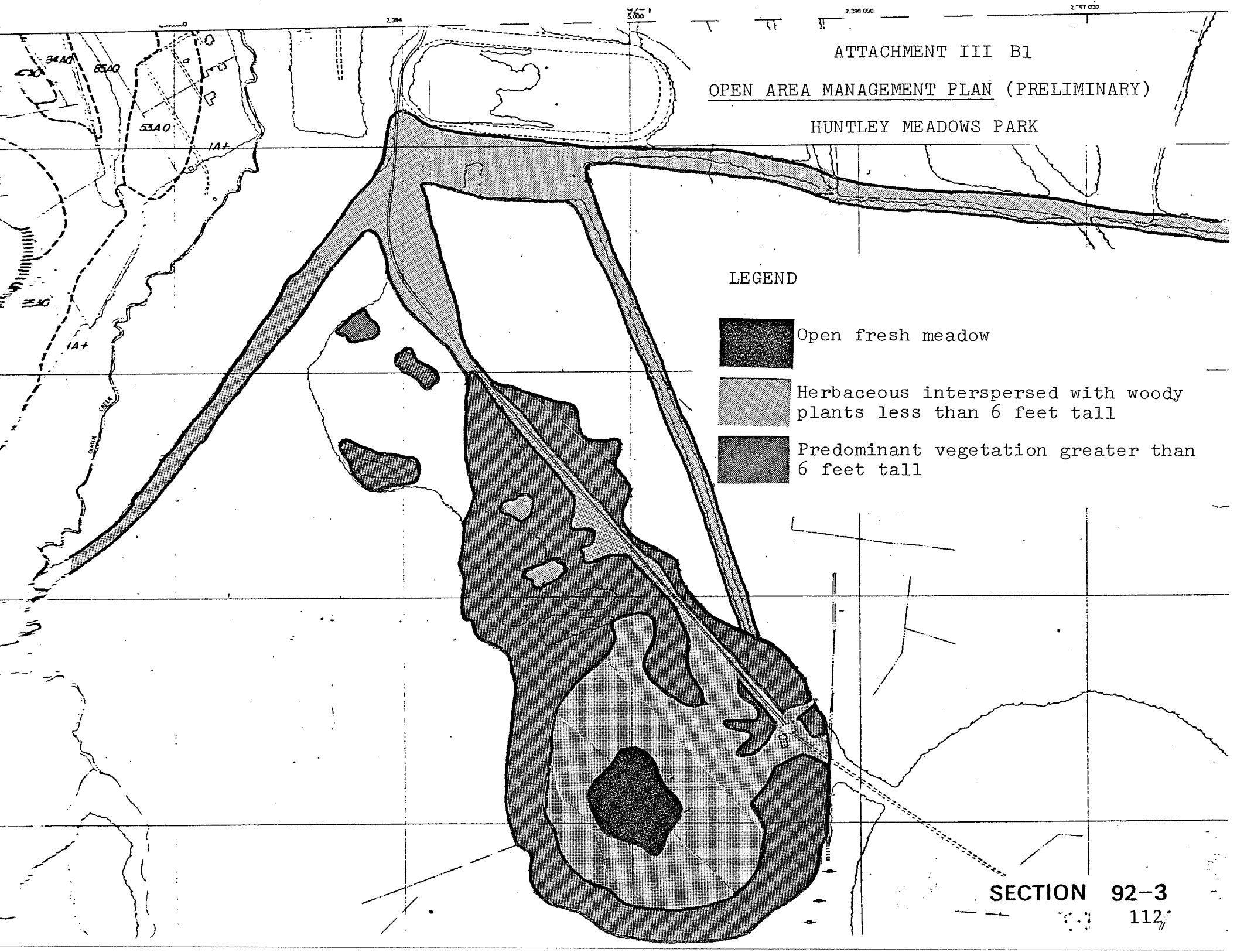
LEGEND

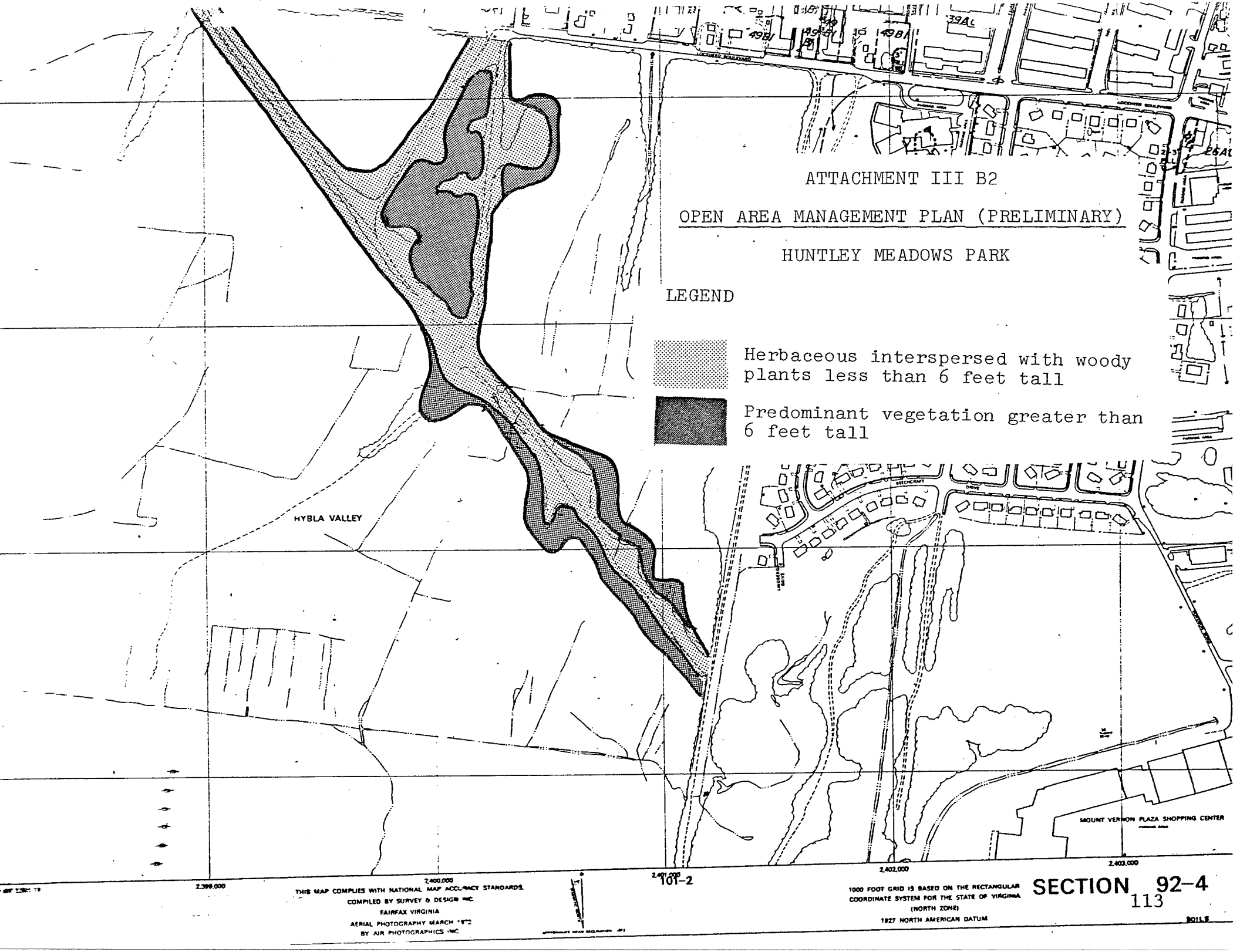
Open area management sites
PROPOSED

ATTACHMENT III B1

OPEN AREA MANAGEMENT PLAN (PRELIMINARY)

HUNTLEY MEADOWS PARK




ATTACHMENT III B2
OPEN AREA MANAGEMENT PLAN (PRELIMINARY)
HUNTLEY MEADOWS PARK
LEGEND
Herbaceous interspersed with woody plants less than 6 feet tall
Predominant vegetation greater than 6 feet tall
HYBLA VALLEY
MOUNT VERNON PLAZA SHOPPING CENTER
2,399,000
2,400,000
2,401,000
2,402,000
2,403,000
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
COMPILED BY SURVEY & DESIGN INC.
FAIRFAX VIRGINIA
AERIAL PHOTOGRAPHY MARCH 1972
BY AIR PHOTOGRAPHICS INC
1000 FOOT GRID IS BASED ON THE RECTANGULAR COORDINATE SYSTEM FOR THE STATE OF VIRGINIA
(NORTH ZONE)
1927 NORTH AMERICAN DATUM

Attachment III C

OPEN AREA USAGE BY SELECTED SPECIES

Species	Feeding	Nesting/Breeding	Cover	Rest
Amphibians				
American Toad		X		
Fowler's Toad		X		
Spring Peeper		X		
Leopard Frog	X	X		
Wood Frog	X	X		
Spotted Salamander		X		
Marbled Salamander		X		
Reptiles				
Spotted Turtle			X	
Eastern Box Turtle	X		X	
Fence Lizard	X		X	
5-lined Skink	X		X	
Northern Brown Snake	X		X	
Garder Snake	X		X	
Worm Snake	X	X	X	
Black Rat Snake	X		X	
Mole Snake	X	X	X	
Milk Snake	X			
Birds				
Perching Birds (seed eating)	X	X	X	X
Perching Birds (insect eating)	X		X	X
Waterfowl	X		X	X
Birds of Prey (raptors)	X			X
Gallinaceous Birds	X	X	X	X
Shorebirds-Cranes-Herons				X

Species	Feeding	Nesting/Breeding	Cover	Rest
Birds (cont.)				
Pigeons-Doves	X	X	X	X
Goatsuckers	X	X	X	
Woodpeckers	X		X	
Mammals				
Opossum	X		X	X
Shrews and Bats	X		X	X
Moles-Voles-Mice	X	X	X	X
Rabbit	X	X	X	X
Fox	X	X	X	X
Woodchuck	X	X	X	X
Raccoon	X		X	
Skunk	X		X	
Weasel	X		X	
Deer	X		X	X

Natural Resource Management Plan
(Preliminary)

Huntley Meadows Park
SECTION IV

WETLANDS MANAGEMENT

A. INTRODUCTION

Wetlands are by definition lowlands covered by shallow and sometimes temporary or intermittant waters, and may include marshes, swamps, bogs, wet meadows, pot holes, sloughs, and riverbottom lands. Ecologically, wetlands are regarded as the most productive of the natural systems as well as one of the most fragile. Economically, wetlands are receiving increased regard as to their importance in the urban community as natural ground water recharging areas, natural water purification systems and as natural storm water (flood) control systems.

Within the total acreage of Huntley Meadows Park, approximately 7% is proposed for management as wetlands. The following information is forwarded to provide direction towards those proposed management efforts. The comments contained are subject to a major hydrologic study. It must also be noted that the actions proposed are directly related to other proposed management actions in the park, as such actions relate to other habitat areas.

B. BACKGROUND

Under U.S. Fish and Wildlife Service direction, all wetlands have been placed in a classification system. Within Fairfax County all wetlands are of the freshwater type with the majority being inland. In Huntley Meadows Park, the classification is continued further with breakdown into specific types. Those types are:

- Inland Fresh Meadow
- Inland Shallow Marsh
- Wooded/Shrub Swamp

A major wtland type, Inland Open Fresh Water, is lacking on the site.

Certain features of Huntley Meadows Park are highly condusive to wetlands management, i.e. topography, hydrology, and soils.

The flat topography of the park site, with reduced stream flow rate (drainage), and the impermeable soils, allow pooling/ponding of water with minimal increased elevations required for impoundment structures. The existing maximum elevation within the proposed wetland management area is 40' above sea level (a.s.l.) with an existing minimum elevation of 34' a.s.l.

Although two drainage systems are present within the confines of the site (Dogue Creek and Little Hunting Creek) it is the Dogue Creek watershed, with a primary tributary of Barnyard Run, which is of primary interest. Main drainage of the park is via Dogue Creek on the western boundary, and Barnyard Run draining the central portion of the park in a south/south westerly direction. The headwaters for the North Fork of Dogue Creek are found in the south-central portion of the site. The channels of said waterways are ill-defined with the exception of a short portion of Barnyard Run in the mid-section of the park, and a section of Dogue Creek from the general location of Wickford Park area northward.

A high watertable exists over much of the park site with a depth of 0-24" to water. It will be an important factor in the wetlands management program that this water table not be lowered to any appreciable degree. It has been determined through field observation, that "permanent water" areas estimated as being available 75-80% of the year, are present at elevations of 35' a.s.l. and below. The proposed management activities as shown in Attachment B are based in large part on this known elevation.

Although information is available for the surface soils of the park, specific information is not available at present regarding sub-soils. It would be assumed that such soils are similiar to other local areas in the coastal plain geologic province, including marine clays.

C. WETLAND MANAGEMENT GOALS AND OBJECTIVES

Goal: To provide wetland habitats for waterfowl in size, number, and diversity as may be compatible with existing topographic, hydrologic and soil conditions.

Objectives:

- Create open water areas, 1-5 acres in size of shallow depth (18-36")

for the species of the tribe Anatini (dabbling ducks) and for the sub-family Anserinae (geese).

- To provide "green browse areas" for wintering and resident Canada Goose populations

Goal: Through prescribed management practices, provide adequate nesting, food, and cover areas in meadow/shrub areas adjacent to open water sites.

Objectives:

- To establish artificial nesting sites (nest boxes, "islands", etc.) in those areas lacking natural nest requirements.

- Improve where necessary natural food supplies, increasing the amount of "desired" plant species.

Goal: To retain for wetland inhabitants (non-waterfowl) adequate habitat in size and diversity to support existing populations of known residents.

Objectives:

- Increase existing marsh habitat to compensate for loss due to creation of open water areas.

- Improve existing vegetation (food sources) towards more desirable natural foods.

Goal: To maintain through adequate controls, existing natural flood and water quality conditions for "down stream" interests.

Objectives:

- Through adequate and proper construction, provide control gates in any impoundments created.

- Monitor any increase in storm water drainage via Dogue Creek as to water quality, developing if necessary, water retention structures on the main stream channel.

D. MANAGEMENT PROPOSALS/SPECIFICS

Although the proposed management practices are directed towards overall upgrading of existing wetlands in Huntley Meadows Park, specific directions are being made towards waterfowl management, in particular towards the dabbling ducks and Canada Geese. The management techniques and methodology for these species are considered best to meet the end desired results.

Both groups of mentioned waterfowl are known to be residents of the county and also known as winter migrants. Within the dabbling ducks, two specific species can best be managed, mallards and wood ducks. Although other dabbling ducks may be present, their numbers (current) in the county are believed limited. Diving ducks may frequent, on occasion, deeper water areas (inland) of the county, but major concentrations are found only in deeper, more open water areas.

The attachment from the BLM Manual 6601-5 (Attachment A) indicates the seasonal sequence of activities for the dabbling ducks. Each activity requires the maintenance of water, food, and cover in varying degrees. Although ducks will nest some distance from water sources (wood ducks - 1 mile), the close proximity of water, food, and cover will contribute favorably to the amount of use of a given site. Both species of ducks will respond to man-made efforts in creation of nesting habitat (nest boxes).

Natural foods of the waterfowl species considered in the management program include insects, fish (minnows), and plant material. The desired plants for waterfowl are also preferred food of a number of other species (mammals) using wetlands. Winter foods include browse (rye, winter wheat, grass) and natural seeds and root stocks of the marsh plants. In certain management programs, heat crops such as corn, are utilized to sustain populations during poor weather conditions. Such latter management practice is not proposed or recommended due to costs, requirements for special farming conditions, and potential major adverse conditions (over use) which may take place.

1. Open Water Areas

It has been previously mentioned that, of desired wetland types, open water areas (ponds, pools, etc.) are lacking on the site. Such areas are essential in waterfowl management programs, and the presence of such areas is deemed of major importance for other wildlife species.

It is proposed that four (4) open water areas comprising approximately 20 surface acres (total) be constructed. Minor removal of vegetation and an estimated removal of soils in the center portions of the areas to a maximum depth of 33' a.s.l. will provide pools throughout the year. It may be anticipated that during a major drought period, such pools would cause minor reduction in the water table level.

Construction Methods/Alternatives

Although the use of mechanized, tracked, equipment (bulldozers, draglines, etc.) are believed feasible in construction of the proposed pond areas (excavation), such use is not recommended. In the normal operation of such equipment, major excessive damage can take place on areas "outside" the construction site. The requirement of a limited "extent of construction" would place limiting factors on the size and type of equipment used. Such excavation method would also require that spoils be removed from the site, creating additional damage through the need of "roadways".

An alternative to mechanized operations would be the use of shallow set explosive charges. The advantage of such method is the low cost of materials and the relative lack of disturbance to adjacent habitat areas. Ammonium nitrate has been used for a number of years by federal and state agencies in waterfowl habitat improvement with major success. A prime disadvantage is that a certain amount of the material "blown" out of the hole will return as loose sediment, thus not creating a clean cut.

2. Marsh Areas

It is proposed that the marsh area in the lower antennae field be increased in size to a total of 27 acres. Marsh areas are of prime importance for food, nesting and protective cover.

Construction Methods/Alternatives

It is proposed that the extension of the marsh habitat be accomplished by means of impounding water to the 36' a.s.l. contour. To accomplish this would require an impoundment established with a maximum elevation of 37' a.s.l. with appropriate water control structures to maintain the lower level.

If soils are appropriate it might be considered that impoundments be of earthen type, removing material from the downstream side of the impoundment. Such an impoundment might also be considered for use as a trail for interpretive purposes or access to the site.

An alternative method of construction is the use of interlocking type bulkhead material, such material being driven into the ground. A double row of such bulkheading with fill material between, could serve the dual purpose of the proposed impoundment, and access method into the lower park area for service vehicles.

3. Browse Areas

As enhancement to the marsh/open water areas it is proposed that several "green browse areas" be maintained in the lower antennae field. Proposed browse is winter wheat, rye, or other such type grass. Planting operations would be by broadcast seeding, after a minor discing of the areas. Two to three browse areas are proposed of one to two acres in size.

Planting would be on an annual basis in early September, with a single mowing operation proposed the following spring.

Construction Methods/Alternatives

Construction is not required to carry out this activity.

4. Green Tree Reservoirs

A standard method of waterfowl habitat improvement in the southern states is by the creation of "Green Tree Reservoirs". In such operations, stands of timber (oak, hickory, etc.) are flooded during the non-growing season to a depth of 12-18". During this period the mast (seed crop) of such trees becomes readily available to waterfowl. During the growing season, the water in the reservoir is drawn off to prevent retardation of the growth cycle.

It is essential that certain factors are present for such areas to function: a constant or known water supply, clay soils, and an ability to drain off the water at the proper season. The first two requirements are present on the Huntley Meadows site, the third is not without ditching operations.

Attachment C reflects an area of wooded swamp in which it is proposed that a modified reservoir be considered. As water is believed to be present in the area during the majority of the year, it is only intended that water levels not be reduced below those presently found. If water reduction takes place due to outside construction influences, it would be recommended that a very shallow impoundment structure be considered to maintain the desired water elevations.

5. Water Management

It is essential in the total wetlands management program to have the ability to control water levels. Excessive amounts of water can be as detrimental as too little water. The combination of three methods of control would be appropriate:

- Standpipes to maintain optimum desired level
- Spillways on impoundment structures to control overflow during excessive rains (flood conditions)
- Culvert/flapgate structure to permit drawdown of water in the impoundments.

The ability to provide drawdown of water is especially important if provisions are to be made for minimal farming operations (green browse areas) and for needed repairs on the impoundments and control structures.

It will be necessary that this agency contract an appropriate engineering firm to determine the specifics of such structures. It will also be necessary that any structures allowing control (flapgates) include security type equipment to prevent unwanted drawdown by vandals.

F. MAINTENANCE

Two annual maintenance operations may be anticipated in the wetlands management program, both operations in connection with the browse areas.

- Annual planting of rye or winter wheat. Primary cost is in the ground preparation (discing) estimated at $50-75/acre. Seed cost is minimal at $8/bu. (56 lbs./bu.) spread at a rate of 5 lbs./acre. Seeding operations would be carried out by hand (broadcast).

- Spring mowing of browse areas (single mowing per season) estimated at $100/acre. 4 to 6 acres are included in this operation per year.

Two additional maintenance operations should be considered, although not on an annual basis.

- Removal of excess emmergent vegetation from pond/pool sites. It is believed that this would be a non-cost maintenance item, utilizing volunteer workers (youth groups) to carry out the need. Supervision requirements would come via division personnel assigned to the site as routine duties.

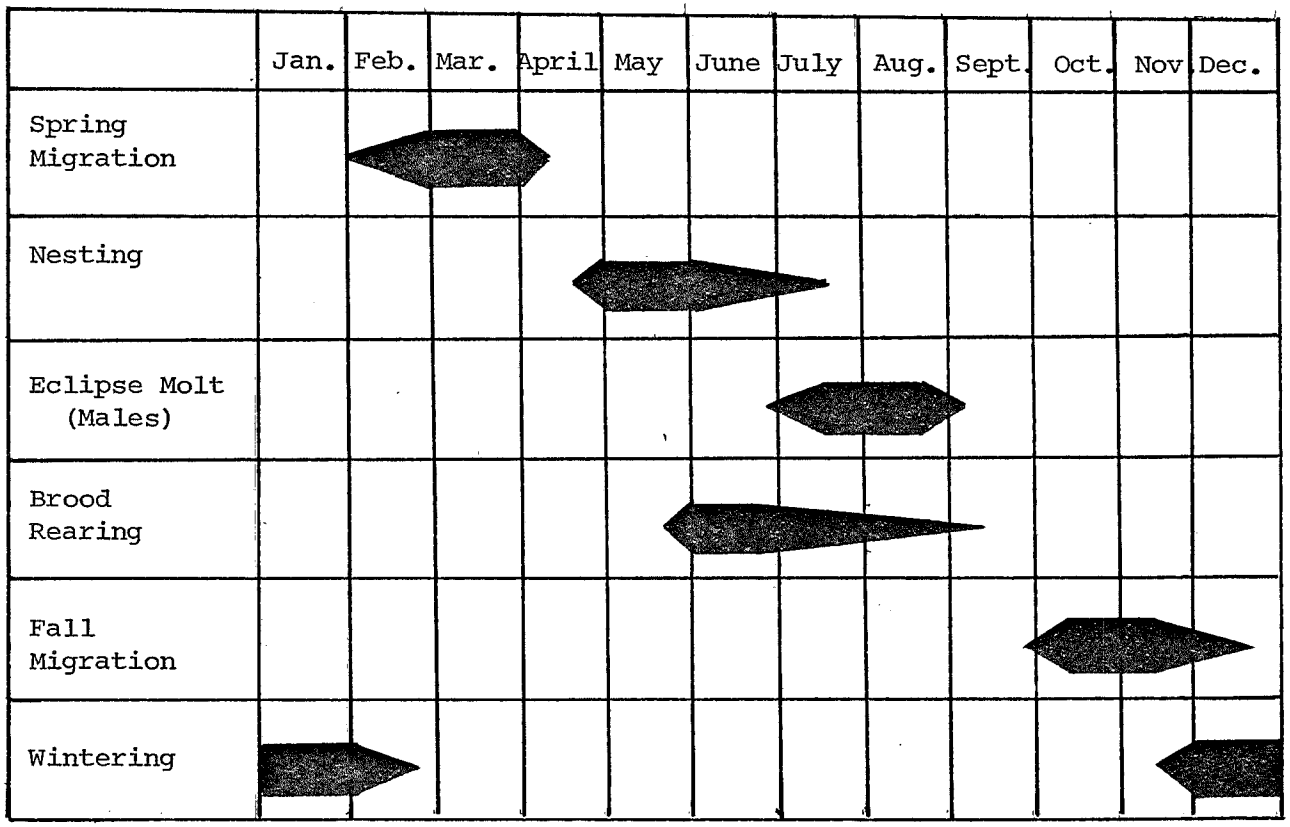
- Long range maintenance in the program would include renovation requirements on the ponds (estimated at 10-15 year periods) and any maintenance requirements under normal conditions on impoundment structures. Such maintenance would be scheduled as required in the appropriate operating budget request.

F. CONCLUSION

The major attraction of a large natural area to the average visitor is the possibility of seeing wildlife in its natural surroundings. The proposed wetlands management program, in association with other management efforts, and the proposed interpretive plan, will make that possibility more of a reality.

In creating water structures (impoundments, pools, ponds) considerations must be given both to public safety and to downstream interests. The shallow nature of the proposed pools contributes to the safety requirements. The control structures suggested will permit the continued flow of water to the downstream needs.

GENERAL SEQUENCE OF SEASONAL ACTIVITIES FOR SURFACE-FEEDING DUCKS



NOTE-F.C.P.A. comments:

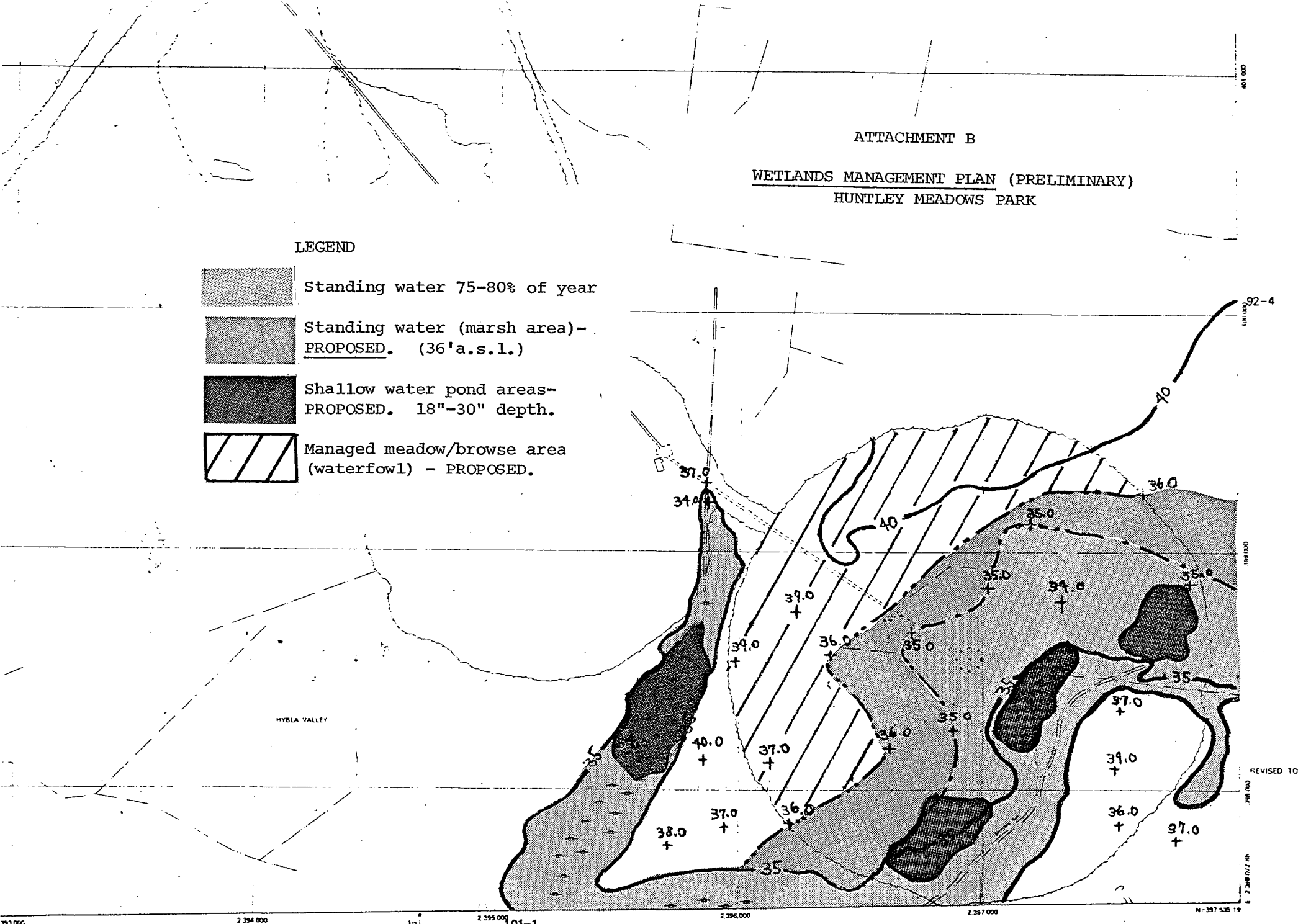
The above data should also be considered true for nesting and wintering populations of Canada Geese in Fairfax County.

It should be further noted that known use of existing wetlands within Fairfax County (interior wetlands) by migrant waterfowl is limited at the present time, with the majority of such use being larger open water areas along the river.

From: BLM MANUAL Technical Supplement 6601-5 Release 6-27
3/3/72

ATTACHMENT B

WETLANDS MANAGEMENT PLAN (PRELIMINARY)
HUNTLEY MEADOWS PARK



SECTION 92-3

SOILS SEC. 92-3

FAIRFAX COUNTY

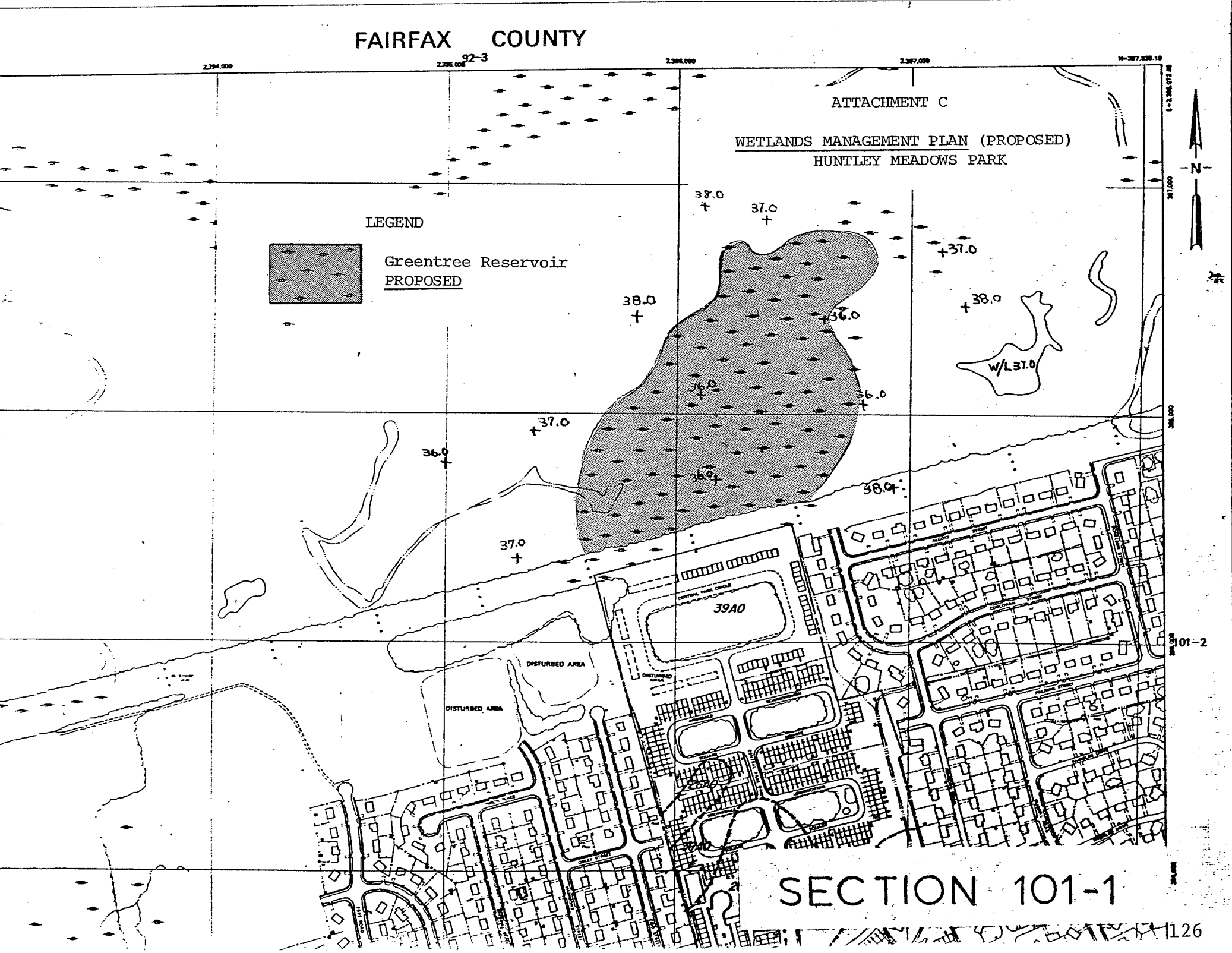
92-3

ATTACHMENT C

WETLANDS MANAGEMENT PLAN (PROPOSED)
HUNTLEY MEADOWS PARK

LEGEND

Greentree Reservoir
PROPOSED



SECTION 101-1

Natural Resource Management Plan
(Preliminary)

Huntley Meadows Park
SECTION V

ENVIRONMENTAL ANALYSIS

A. INTRODUCTION

The activities and actions proposed in the Natural Resource Management Plan are subject to review as they relate to the impact upon the environment. Whenever alteration is made of a natural habitat, certain impacts may be anticipated not only in the immediate area of alteration, but in contiguous areas as well.

The proposed activities within the plan are subject also to review as they apply to specific regulations, ordinances, and policies of the Fairfax County government. In particular, three such documents are noted:

- Stream Valley Policy
- Potomac Shoreline Resolution
- Tree Ordinance

It may be safely stated that the actions/activities prescribed are not in violation by intent of any regulation, ordinance, or policy. Rather, as stated in the plan, the actions/activities are required to maintain an area of diverse natural habitat communities, with the creation of enhancement areas for wildlife use.

B. FOREST MANAGEMENT ANALYSIS

1. The loss of trees due to clearcutting operations is one of the most visible impacts on Huntley Meadows Park. Permits or other authorization may be required due to the "Tree Ordinance". All trees proposed for clearcutting operations are considered small (less than 18" D.B.H.) and represent undesirable species in the forest stand. It may be assumed that trees cut will damage some standing trees as they fall, and trees on the perimeter of newly created openings will suffer sun scald of leaves, branches, and main trunk. The water table will

rise temporarily as a result of fewer root systems, in the area of clearcuts.

2. The girdling operation will obviously reduce the tree's resistance to insects and disease before it finally dies. This negative impact is more than cancelled out by the food and cover this operation will provide for many forest animals such as woodpeckers and wood ducks.

3. Heavy machinery used to prepare openings for artificial planting will compact the soil as they enter and leave the site, and trees may be injured or cut down to facilitate equipment access.

4. The noise impact from chain saws, explosives, and heavy machinery will have a short term nagative impact on the surrounding community.

5. The proposed impoundment of water in the forest area will increase the height of the water table in the surrounding area. Trees and other vegetation with a low tolerance to changes in the site condition will be adversely affected. Downstream hydrological characters will be altered (at least temporarily) during construction of the impoundment structure and subsequent filling of the depression behind it. If borrow areas are to be created there will be a short term negative affect on these areas, including minor siltation, until vegetation becomes re-established.

C. OPEN AREA MANAGEMENT ANALYSIS

The overall impact of the proposed open land (area) management will be overwhelmingly positive. As mentioned previously the manipulation will result in increased plant and animal diversity while maintaining the unique character of the park. The wildlife resources will be made more accessible to the park visitor and, combined with the activities of the "Interpretive Plan", will result in increased interpretive and recreational potential. The maintenance of easements and possibly fire roads will provide protection for the park.

Any habitat manipulation will have some short-term adverse affects. These are primarily a factor of disturbance caused by the presence of workers and machinery. The adverse affects will be held to a minimum by working small units rather than large areas and by providing rotational maintenance rather than large scale impacts over a short time period. It is recognized that mowing operations

can be destructive, but proper planning will minimize disturbance by spreading the task over the entire non-breeding and non-rearing times of the year. The linear nature of much of the mowing also reduces impact.

D. WETLANDS MANAGEMENT IMPACTS

1. Alteration of existing habitat. Deemed positive as such alteration is necessary for improved and/or upgraded wetland conditions in the park. Actions proposed should increase waterfowl use of the site and be also beneficial to other wildlife inhabitants of the park.

2. Disturbance to adjacent habitats during construction. Considered the most critical impact (negative). Care must be taken to restrict such disturbance to the minimum level possible. Such disturbance can be long lasting in fragile environments such as wetlands.

3. Restriction of waterflow. Short term impact to downstream interests during the construction phase. Once desired waterlevels are obtained, normal flow rate should return.

4. Siltation. Impact should be restricted to the development areas alone and should be of short term duration.

5. Noise. Short term impact during construction phase only. Impact would have primary effect on wildlife in the area of construction. Impact on neighboring communities it is believed would be minimal due to distances and natural buffer areas.

E. OTHER IMPACTS

The increased human use of the park will cause some disturbance factors and adverse impact. These include soil compaction, vegetative trampling, nest destruction, harrassment of wildlife, etc. The potential impact of increased human use, however, can be reduced through quality interpretation, rotational use sites, alternative trails and protected areas.

There is some potential for annual overpopulation due to maximizing habitat diversity. The potential is primarily limited to Ungulates (deer) and certain

other mammals (skunks, raccoons, etc.) This type of situation would require individual attention when and if it occured. There is little chance of predator problems since these animals fluctuate with the abundance of prey species. Attention should be given, however, to the large numbers of free ranging cats and dogs within the park. These animals are known to be extremely destructive to wildlife populations.

Natural Resource Management Plan
(Preliminary)

Huntley Meadows Park
SECTION VI

POTENTIAL SOURCES OF TECHNICAL AND FUNDING ASSISTANCE

A. INTRODUCTION

Although "public sensitivity to wildlife is rooted in our history"[1] it is only recently that national attention has been directed toward the "ecological, economic, educational, esthetic, historical, recreational, and scientific value of nongame species of native fish and wildlife"[2]. The October 1976 conference on "Wildlife and America", sponsored by the President's Council on Environmental quality, represented a benchmark in changing public policy.

Previously, federal efforts with regard to wildlife have been directed almost exclusively to "rescue mission" operations and game management programs. Now national efforts on a far larger and broader scale are being proposed to establish and protect complete stable ecosystems; a major educational campaign along these lines is being initiated under Federal auspices.

Such broadened public interest underscores the timeliness of the proposed development by the Park Authority of a Natural Resource Management Plan for Huntley Meadows Park.

B. OBJECTIVES

In developing the Preliminary Natural Resource Management Plan it appears both desirable and feasible to seek the cooperation of outside agencies. The objectives of such actions would be to:

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1. Current Investments, Projected Needs and Potential New Sources of Income for Nongame Fish and Wildlife Programs in the United States, Wildlife Management Institute, 1975
2. "Federal Aid in Nongame Fish and Wildlife Conservation Act of 1976"

1. Make available to the Park Authority the highest level (state-of-the-art) professional expertise

2. Provide additional funding as may be required to implement the proposed management recommendations

3. Broaden the scope and depth of the program by incorporating the resources of outside agencies

4. Gain recognition of, and set a precedent for, the feasibility of such programs in urban parklands; Huntley Meadows might serve as a pilot project for similar cooperative programs across the country.

Potential sources of technical and funding assistance for this project include federal, state and private agencies.

C. TECHNICAL ASSISTANCE

Representatives of the Virginia Commission on Game and Inland Fisheries have expressed a high degree of interest in exploring the possibility of a cooperative program for the management of non-consumptive wildlife at Huntley Meadows Park. According to Francis Satterlee, the Commission's Information Officer, a program of this type has received high priority by the Commission's subcommittee on non-game wildlife.3 The Executive Director and Commissioners have been briefed on the Conservation Division's efforts to date and several Commission members toured Huntley Meadows Park on November 21, 1976.

Proximity to the nation's capital is also a distinct advantage in obtaining consultation from federal agencies such as the U.S. Fish and Wildlife Service, U.S. Forest Service, Bureau of Land Management, and Soil Conservation Service. Contacts have already been made with representatives of these agencies. Consultation services have also been offered by the prestigious Wildlife Management Institute, a private organization which has actively promoted research and legislative programs for many years.

3-Visit to site on November 2, 1976

D. FUNDING

The Preliminary Master Plan includes cost estimates/maintenance costs of $50,000 for marsh and pond development. Expenditures for development of the forest and meadow habitats would bring the total estimated initial cost to approximately $78,000. Annual maintenance costs for implementing the Natural Resource Management Plan are estimated at $6,250.

Under the proposed Capital Improvement Program, $253,800 is allocated to the Huntley Meadows development in FY 79. As noted at the outset of this Preliminary Master Plan, implementation of the interpretive plan and development of passive recreation opportunities are closely related to, and dependend upon, implementation of the proposed Natural Resource Management Plan. Therefore, initial Huntley Meadows monies should be directed toward habitat improvement. However, such funding is contingent upon public approval of the upcoming bond referendum, and it seems prudent to explore the potential of outside funding.

1. Virginia Commission on Outdoor Recreation (COR)

Land and Water Conservation Fund (LWCF) monies are available for development of parklands on a 50 - 50 federal/state matching formula. Recent congressional legislation increased the annual LWCF appropriation to $397 million for FY 77, an increase of $80 million. Such funds may be utilized for the development of trails, boardwalks, access roads, and facilities--which again, are closely related to implementation of the proposed Natural Resource Management Plan. Although funding of wildlife management programs does not fall under the intent of the LWCF, some of the proposed habitat modification actions could conceivably be construed as site preparation "to improve vistas" and hence qualify for funding under the "miscellaneous" category which includes funding for clearing, grading, seeding and planting"4.

Since Huntley Meadows Park was acquired through the Federal "Legacy of Parks" program funding requests for site development might receive special consideration from COR.

4-Telecommunication with Jerry Fouse, COR Field Planner, October 27, 1976

2. The Commission on Game and Inland Fisheries administers, in the state of Virginia, the "Federal Aid in Fish and Wildlife Restoration Program" (Pittman-Robertson Act). Traditionally state appropriations under this act have been directed toward game management since funding is derived from taxes on the sale of sporting equipment. However, a small percentage of state agency funding has in the past been channeled into nongame management and there is increasing pressure on these agencies to broaden their nongame programs.

   Given the expressed interest of the Commission in exploring the possibility of a cooperative program at Huntley Meadows Park, the possibility of partial funding under the Pittman-Robertson Act should be investigated with the Commission.

3. The "Federal Aid in Nongame Fish and Wildlife Conservation Act of 1976"[5], if enacted, offers a high potential for funding. Of particular relevance to the Fairfax County Park Authority project, the Act finds that "Urban dwellers have insufficient opportunity to participate in recreational and other programs designed to foster human interaction with nongame wildlife and, thereby, a greater appreciation and awareness of the environment." The Preliminary Interpretive and Natural Resource Management Plans address this precise issue.

   The Act would authorize an appropriation of $10 million annually during fiscal years 1978 - 80, to be administered by the states. The state apportionment is to be made in part on the basis of population concentrations, and up to 25 per cent of funding would be available for information and education programs, law enforcement and extension services, with the remainder directed toward specific management programs. Both conditions are applicable to Huntley Meadows Park programs.

4. The National Wildlife Federation awards "Conservation Fellowships" at the masters, doctoral, and post-doctoral levels. A total of $60,000 was awarded last year. An extended research project in urban nongame wildlife management conducted at Huntley Meadows under this program would be a valuable addition to the Conservation Division efforts.

5-Introduced into the U.S. Senate on the closing day of the 94th Congress and will be reintroduced in the Senate early in 1977.

In summary, the increased public attention to wildlife management for non-consumptive use will undoubtedly generate varied sources of funding in the near future. The timliness of the proposed Natural Resource Management Plan offers the opportunity for the Fairfax County Park Authority to "get in on the ground floor" for such funding as well as gain recognition as a leader in the increasingly essential area of natural resource management in urban parklands.

Natural Resource Management Plan
(Preliminary)

Huntley Meadows Park
SECTION VII

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MASTER PLAN
HUNTLEY MEADOWS PARK

FAIRFAX COUNTY • VIRGINIA

DATE: OCTOBER 1978 TAX MAP SEC. 92-4 1262.46 ACRES

FAIRFAX COUNTY PARK AUTHORITY

FREDERICK M CRABTREE - CHAIRMAN
ESTELLE R. HOLLEY - VICE-CHAIRMAN
LYLE C. McLAREN - SECRETARY-TREASURER
NEWTON W. EDWARDS
GLENN B. FATZINGER
CALVIN HILL
JOHN MASTENBROOK
ROBERT D. MOSS
JEAN M. SKORUPSKI
JAMES F. WILD

JOSEPH P. DOWNS -DIRECTOR
DONALD F. LEPERER -SUPT. OF DESIGN

SCALE IN FEET 200 0 200 400 600 800

LOCATION MAP
NO SCALE

WILDLIFE AND FOREST MANAGEMENT

WETLAND STREAM VALLEY MANAGEMENT

MANAGED MEADOW AREA

MANAGED WETLAND AREA

WILDLIFE AND FOREST MANAGEMENT

ENVIRONMENTAL CENTER
- VISITOR'S CENTER
- ENVIRONMENTAL STUDIES BUILDING

OPEN RIDING FIELD

10 TRAILER PARKING

MAINTENANCE YARD

POND

OBSERVATION PLATFORM

PICNIC AREA

PARKING (50-75 CARS)

WICKFORD PARK F.C.P.A.

U.S. COAST GUARD STATION

TRAIL TO HUNTLEY HOUSE

HYBLA VALLEY ELEMENTARY SCHOOL

HYBLA VALLEY PARK

HYBLA VALLEY MOBILE HOMES AUDUBON ESTATES

TO HAYFIELD SUBDIVISION

TO WHETSTONE ROAD

TO VANTAGE DRIVE

FUTURE EXTENSION LOCKHEED BLVD.

SERVICE ROAD

BOARDWALK

HIKING-BIKING TRAIL

NATURE TRAIL

LITTLE HUNTING CREEK

POHICK CREEK

MATCH LINE

(TO BE DEMOLISHED)

MT. VERNON VALLEY

MUDDY HOLE FARM PARK F.C.P.A.

PINEWOOD LAKE

FAIRFIELD

MT. VERNON WOODS

MT. VERNON WOODS PARK F.C.P.A.

SEQUOYAH

WOODLAWN VILLAGE

Huntley Meadows

Add 6

ATTACHMENT NO. 3

COST ESTIMATE

The following estimates were made in November 1976 and reflect the preliminary master plan as it presently stands. In most cases, additional expenses were allocted for contingencies and expected difficulties in development due to the high water table.

		November 1976		Revised - July 1978	
I.	Environmental center				
A.	Entrance road - 22' wide, asphalt, curb and gutter, 1300 LF	$ 45,500		$ 54,600	
B.	Parking area - asphalt, curb & gutter, drainage, etc., approx. 75 cars	$ 56,000		$ 67,200	
C.	Visitors center (to include exhibit space, office, reference library, restrooms, storage, work area, and small auditorium/ classroom) 4,600SF	$ 207,000		$248,400	
*D.	Environmental studies building (to include temporary overnight facilities, small kitchen, restrooms, work areas, etc.) 3,700 SF	$ 166,500		$199,800	
E.	Miscellaneous (clearing and grubbing, overflow parking, picnic area, site work) LS	$ 50,000		$ 60,000	
	Total I		$ 525,000		$ 630,000
II.	Observation areas				
A.	Observation platform (10-15')	$ 20,000		$ 24,000	
B.	Marsh and pond development, LS (approx. 20 ac.)	$ 50,000		$ 60,000	
	Total II		$ 70,000		$ 84,000

*It has been recommended that this be funded fully or partially by the School system.

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		November 1976		Revised - July 1978	
III.	Trails				
	A. Hiking/biking trails - asphalt, 8' wide (includes additional base material), 33,100LF @ $10./LF	$ 331,000		$477,000	
	B. Boardwalk, 8,000 LF	240,000		$288,000	
	C. Nature trail, 9,200 LF	$ 27,600		$ 33,120	
	D. Bridges, LS	$ 20,000		$ 24,000	
	Total III		$ 618,600		$ 741,600
**IV.	Maintenance yard				
	Total IV		$ 64,000		$ 76,800
V.	Miscellaneous items				
	A. Upgrading existing service road (off S. Kings Highway), 12,000 SY	$ 66,000		$ 79,200	
	B. Signs, permits, clean-up, site work, etc. LS	$ 10,000		$ 12,000	
	C. Horse facilities (incl. parking, trails and ring)			$ 25,800	
	Total V		$ 76,000		$ 91,200
	Total I-V		$1,353,600		$1,727,320
	15% Contingencies		$ 203,040		$ 259,098
	10% Consultant Fee		$ 135,360		$ 172,732
	TOTAL		$1,692,000		$2,159,150

**To be upgraded by FCPA crews, in-house.

ANNUAL MAINTENANCE COSTS

The following annual maintenance costs can be anticipated for Huntley Meadows Park based on estimates by Park Operations personnel and the Productivity Report for FCPA, dated October 1975.

			Revised - July 19
1.	Entrance Road and service road repairs (patching) 6,900 FT	$ 690.00	$ 828.00
2.	Nature trails - combined average of gravel/wood chip trail, 16,500 FT	$ 5,065.00	$ 6,078.00
3.	Hike/bike trails (gravel), 33,100 FT	$ 9,665.00	$11,598.00
4.	Asphalt trails (handicapped), ½ mi. min.	$ 1,848.00	$ 2,217.00
5.	Parking area (approx. 75 cars)	$ 540.00	$ 648.00
6.	Picnic area	$ 702.00	$ 842.00
7.	Environmental area	$54,975.00	$65,970.00
	a. Visitor center - $54,125.00 b. Environmental studies bldg. - $1,850.00*		
8.	Observation tower maint.	$ 600.00	$ 720.00
9.	Boardwalks, 8,000 FT	$ 8,000.00	$ 9,600.00
10.	Wayside exhibit area (3 units)	$ 450.00	$ 540.00
11.	Natural resource management	$ 6,500.00	$ 7,800.00
	a. Forest management - b. Meadow management - c. Wetland management -		
12.	Horse trails -		$ 2,603.00
13.	Trailer parking -		$ 100.00
14.	Riding ring -		$ 1,000.00
	Total	$89,035.00	$110,545.00

*Reflects only exterior building maintenance.

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COSTS VS BENEFITS

To the extent possible, the anticipated costs of the facilities should be weighed against the benefits that the facilities might provide. While it is an easy matter to attach a quantitative value to cost, it is not so simple to do so with regard to benefits. The closest we might come to such a value is an estimate of the potential ultimate demand for, or interest in, the facilities which are recommended for Huntley Meadows Park. While this estimate is necessarily based on a number of assumptions, it can provide a measure of potential demand and use against which the costs may be evaluated.

As a County wide facility, Huntley Meadows Park would be serving a recreational resource of approximately 560,000 people, with a projected forcast of 737,000 persons by 1985. Allocated against this future number of users of this facility, the 1.7 million dollar cost of developing the park breaks down to approximately $2.71 per person. Based on an estimated minimum visitor use of 50,000 persons/year, the above costs average $2.13/visit. The maximum visitor usage would be 125,000 persons/year at a cost average of $.85 visit.

The benefits derived from these facilities far exceed the relatively inexpensive costs. Besides cost, Huntley Meadows offers a great relief to the rapid sprawl of development in Fairfax County and particularly in the Lee/Mount Vernon area. The types of managed facilities proposed also will:

1. Improve and maintain the water quality in an already sensitive area.

2. Further reinforce the quality of air by eliminating any additional pollutants.

3. Provide a habitat large enough to harbor large quantities of wildlife with minimal interference from mankind.

4. Prevent any further impact on noise levels.

5. Mental and physical improvement of human life.

In terms of the projected population which this park would serve and the additional benefits derived, the costs do not appear to be disproportionate or excessive.

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PHASING PRIORITIES

It is recommended that the following order of priorities be established for the proposed improvements/development of the park:

1. Nature trails and wayside exhibits
2. Visitors' Center (includes access and parking)
3. Marsh and pond development
4. Hiking/Biking/Horse trails
5. Observation platforms
6. Environmental studies building

With the completion of the District III maintenance shop, it is felt that the FCPA can best utilize the park by the development of the marsh and pond areas in conjunction with the nature trails. Both activities will provide additional attractions to the park visitor as well as providing the Conservation Division with a work area they can immediately utilize in conjunction with present programs. In sequence, additional trails, visitor center and the observation areas are phased in development as funds have been requested in the CIP. Until such time as final parking areas and access have been completed, the existing asphalt area near the maintenance yard could be operated for parking purposes.

The following information is from the Capital Improvement Program (CIP) 1978-82: dated July 1976.

	FY 78	FY 79	FY 80	FY 81	FY 82	Total
Huntley Meadows Development	$21,000	$149,565	$95,200	$95,000	$75,235	$436,000
Huntley Historic House (acquisition & development)	$93,000	$137,000	$100,000	$50,000	$50,000	$430,000

This breakdown works well with the phased development shown.

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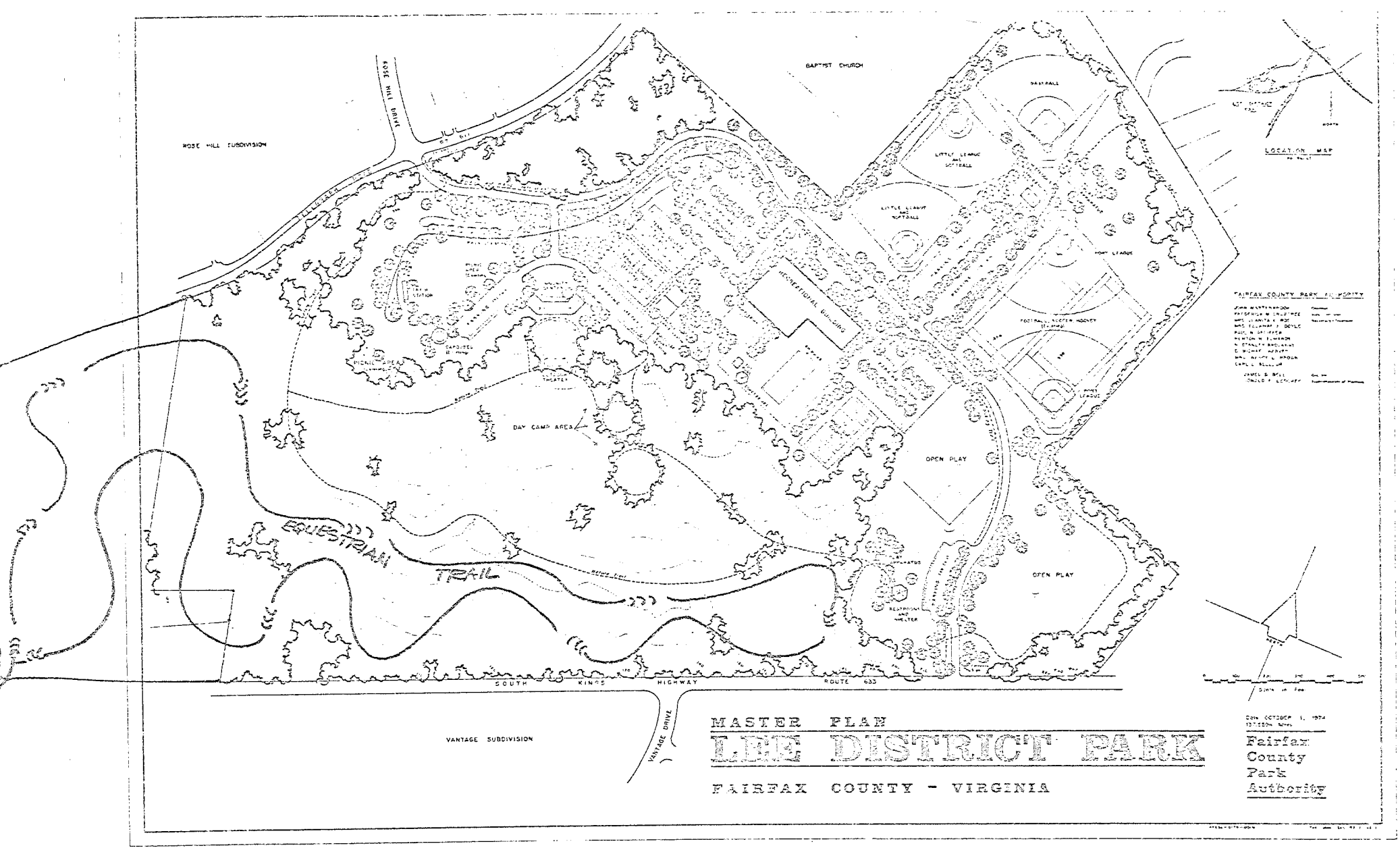

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