

WASHINGTON CROSSING STATE PARK  
NATURAL AREA MANAGEMENT PLAN

## PREFACE

Access to natural unspoiled areas used to be easy, and a healthy environment with plentiful natural resources, was taken for granted not too many years ago. But now, undeveloped areas are disappearing and environmental quality and natural resources have diminished.

The Washington Crossing Natural Area with its Nature Center can make learning about ones environment an enjoyable experience with far reaching benefits. This area is well endowed with a variety of interesting natural features which invite use and interpretation.

Trails which bring park visitors into contact with this varied environment are the principal use of this area. There are several different kinds of trails including a cross country trail, a horse trail and a trail for the blind. Boardwalks are found at different points along the trails in the wet areas of the natural site enabling year round use.

The need for a management plan is necessary to ensure that future generations will also be allowed an experience in observing and enjoying the Washington Crossing Natural Area.

## INTRODUCTION

2

Washington Crossing Natural Area in the Washington Crossing State Park is located in rural Hopewell Township in northern Mercer County. Situated eight miles north of Trenton and six miles south of Lambertville the natural area may be approached from the main park entrance on County Route 546 in Titusville, New Jersey.

The area is a large alluvial flood plain in the Piedmont region characterized by rounded hills and broad valleys. The only major topographic features in close proximity are Baldplate Mountain and Strawberry Hill. Other hills are usually less than 500 feet above sea level.

GEOGRAPHIC BOUNDARIES

These will be supplied by the surveyor.

4

BRIEF HISTORY OF OWNERSHIP, OCCUPANCY AND USE

The Nature Center building itself was built by the Burkerts who then sold the house and some land to Leon H. Lippincott. Lippincott then sold the house to the State of New Jersey in 1966 for \$28,138.10. The area of land totalled about 18.7 acres and was purchased through the Green Acres program.

The small buildings behind the Nature Center parking lot were occupied by Mrs. Elizabeth Burkert. She sold the property which consisted of the house, a barn and 2 chicken coops as well as 1.27 acres to the State of New Jersey with the stipulation that she keep the right to occupy the house until her death. She is presently still alive and so the property is not officially part of the Park yet.

In the field that is along the road to the Nature Center a small observatory is present. The observatory is run and owned by the Astronomers Club in connection with the N.J. State Museum. The land is rented to the organization for \$1.00 per year as long as the area is opened to the public on occasion.

Most of the natural area that contains the trails and streams was owned and farmed by Mr. Harbourt. Part of the land was leased to Mr. Herbert Niederer and farmed with Corn. Mr. Neiderer also owned some property and sold it to the State in 1950 for \$74,500.00. This property consisted of 86 acres.

The records found were incomplete and unclear as to exactly how much property was purchased from Mr. Harbourt but it appears to have been the remainder of the natural area not yet mentioned.

The rest of the park was aquired similarly from various private owners.

5  
Present ownership of the Washington Crossing Natural Area belongs to  
the State of New Jersey, Department of Environmental Protection, Division  
Of Parks and Forestry.

**TYPE OF ACQUISITION**

The Natural area was acquired through the Green Acres Program in order to enlarge the park. The only area with any restrictions is that owned by Mrs. Burkert which is hers to use and occupy until her death. This property is located just behind the Nature Center Parking lot.

The Washington Crossing Natural Area is administered by the Department of Environmental Protection, Division of Parks and Forestry.



8

### AREA DESCRIPTION

The primary area of the natural site includes old fields and mixed hardwood forests as well as two small streams which are subject to seasonal conditions and are fed primarily by surface runoff.

The area is located within a basin that was formed as a result of faulting. The area then gradually filled with sediments eroded down the side of the basin and deposited by streams and rivers. Consequently the area contains mostly sedimentary rocks - red and black shales and coarse conglomerates.

Vegetation in the natural area is primarily deciduous. Most of the native vegetative cover is concentrated in steep slope areas (ten per cent or more) near the streams that traverse the site. However, some substantial stands of deciduous trees occur in areas with a slope of less than ten per cent. In the primary area the topography is not dramatic, trees and shrubs help to create the character of the landscape. Vegetative cover also provides habitats for birds and animals; it helps to stabilize the soil from the climatic elements, particularly wind, rain and sun.

Ninty to one hundred per cent of the wildlife habitat in the park has been altered since colonial times. The wildlife in the park today consists of deer, small game animals and birds. There is little fishlife in the two streams.

9

The Washington Crossing Natural Area is surrounded by fields and forests providing a natural transition from the natural area to the secondary/buffer area.

On the northeast, the buffer area begins at Brick Yard Road and extends to the Parks group camping area which is partially wooded and partially open field. There is also a soybean field in this buffer area which is also located just beyond Brick Yard Road and just northeast of the camping area.

The northwest buffer of the Natural Area begins at the woodline between the first and second fields and becomes a feed corn field which extends to Church Road.

Steele Run Stream begins the southeast buffer area which continues through primary forest towards the Open Air Theatre and Knox and Green Groves.

On the southwest, the buffer area is the limits of the Park where the town of Titusville begins. This area is partially wooded and partially open field.

There is a gradual shift from the Washinton Crossing Natual Area to the buffer/secondary areas. Both of these areas hold primarily forests and open fields. Because of this similarity in vegetational zones, wildlife in the buffer areas remains much the same as within the natural area.

CLIMATE

The climate of the natural area is characterized by rather cold winters with temperatures dropping into the teens. During the month of January the minimum average temperature is approximately 25°F. Summers are generally warm, sometimes hot, with temperatures averaging about 80°F during the month of July. Precipitation ranges from 40"-50" for one year. The precipitation is fairly evenly distributed through the year, although there are fewer cloudy and rainy days in the summer than the winter. The rain during the summer is more intense, often in the form of thunderstorms, and this equalizes the numerous days of inclement weather during the winter. August is the rainiest month. The average depth of frost in the area is approximately one foot. The prevailing winds are from west to east, and play an important role in creating the cold winters and warm summers. The growing season lasts about 195 days, from April 16 to October 28; however, frosts have been recorded as late as May 12 and as early as October 11.

## GEOLOGY AND SOIL FEATURES

The Washington Crossing Natural Area is located within a basin that was created approximately 180 to 220 million years ago during the Triassic Period of Geologic Time. The basin was formed as a result of a violent shifting of the earth's crust called faulting. This area then gradually was filled with sediments eroded from the sides of the basin and deposited by streams and rivers. Our site is located in a basin which originally was part of the Appalachian Mountain Chain which during the Paleozoic era extended from Mexico to Newfoundland. This basin is the largest in the Appalachians and extends from Central Virginia to northern New Jersey.

The sedimentary stones formed in this basin are classified in the Newark Group which is divided into three facies. The first of these facies includes arkose and the red shales associated with it, and because these are the most erosion resistant sediments in the group they form the most conspicuous outcrops. The second facies is composed of the black shales which in some instances contain impressions of plants and fresh water fish. Coarse conglomerates are the third facies of the Newark Group and form a border near the fault margin of some of the basins and were deposited by fast flowing streams from the highlands.

Over the years in some areas streams and rivers have deposited sediments on floodplains, such as that in the Washington Crossing area. These floodplains are some of the most fertile lands in the State.

Washington Crossing Natural Area located in the Piedmont region, is characterized by rounded hills and broad valleys. Hills in this region are usually elongated in form and run from northeast to southwest in direction. The natural area is located in a large alluvial floodplain. The only major topographic feature in close proximity are Baldplate Mountain and Strawberry Hill. Other hills are usually less than 500 feet above sea level.<sup>2</sup>

The soils in the natural area are composed of sediments deposited by erosion and alluvial deposition by the Delaware River. The eroded sediments are classified in the Newark Group. Aluvially deposited soils are some of the best agricultural soils to be found in New Jersey. On the site the soils are basically composed of various types of loams ranging in depth from one half foot to six and one half feet before reaching bedrock. These soils are generally well drained. <sup>3</sup>

Washington Crossing  
Soil Classifications

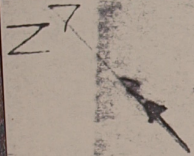
Soil Classifications	% slope	class	wildlife			grain and seed crops	legumes	upland plants	wild herbaceous	woody plants	hard wood	coniferous	wetland food & cover plants	shallow water developments	excavated ponds	Drainage	general and woodland
			openland	woodland	wetland												
BuB Bucks Silt Loam	2-6	IIE 55	1	1	4	2	1	1	1	1	3	4	4	4	well drained	gently sloping, deep, moderate erosion risk 301	
BuB2 Bucks Silt Loam	2-6	IIE 55	1	1	4	2	1	1	1	1	3	4	4	4	well drained	"	
BuC2 Bucks Silt Loam	6-12	IIIe 55	1	1	4	2	1	1	1	1	3	4	4	4	well drained	mod. sloping, deep, 301 severe erosion limitation	
KsC Klinesville Shaly Loam	6-12	IVe 66	2	2	4	3	3	2	2	2	2	4	4	4	excessively well drained	severe erosion possible mod. slope, shallow, 4dl	
KsE Klinesville Shaly Loam	12-30	VIe 66	3	3	4	4	3	3	3	3	2	4	4	4	well drained	severe limits of erosion, strong slope, shallow, 4dl	
ReB Reaville Silt Loam	2-6	IIIw 76	3	2	3	3	2	2	2	2	3	3	4	4	moderate permeability	severe water limits., 3wl shallow depth to bedrock	
ReB2 Reaville Silt Loam	2-6	IIIw 76	3	2	4	3	2	2	2	2	3	4	4	4	moderate permeability	"	
PeB Penn Shaly Silt Loam	0-6	IIE 65	2	1	4	2	1	1	1	1	3	4	4	4	well drained	mod. erosion risk, 301 mod. deep, gentle slope,	
PeC Penn Shaly Silt Loam	6-12	IVe 65	3	2	4	3	2	2	2	2	3	4	4	4	well drained	severe erosion limits, shallow, mod. slope, 4dl	
PeD Penn Shaly Silt Loam	12-18	VIe 65	3	2	4	3	2	2	2	2	3	4	4	4	well drained	severe erosion limits, strong slope, shallow, 4dl	

1 - well suited      2 - suited      3 - poorly suited      4 - unsuited

e - risk of erosion  
w - problems with wetness,  
poor drainage or overflow

(taken from - "Soil Survey of Mercer County, N.J." U.S. Dept. of Agric.,  
Soil Conservation Service. Jan. 1972)

# SOIL CLASSES



PeB ridge  
 trails  
 streams

1 mile  
 1/4 mi

192

0  
 0.5  
 1

5