

Natural Area Mapping and Inventory of Brust Park 2007 Survey



Prepared by the Natural Resources Group
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Brust Park Natural Area Mapping & Inventory

2.09 acres

Introduction

City of New York Parks & Recreation (DPR) manages one of the most extensive and varied park systems of any city in the world. These 29,000 acres of city park property occupy about 15 percent of New York City's total area. In addition to flagship parks such as Central Park and Prospect Park, the city's parklands include over 11,000 acres of natural areas.

Until the 1980's, the Parks Department was primarily concerned with developed landscapes and recreation facilities rather than natural areas. In the absence of a comprehensive management policy, these areas succumbed to invasive species, pollution and erosion.

In 1984, Parks established the Natural Resources Group (NRG) with a mandate to acquire, restore and manage natural areas in New York City. The wetlands, forests, meadows, and shorelines under NRG's jurisdiction provide valuable habitat for hundreds of species, from rare wildflowers to endangered birds of prey. In addition to the goals mentioned above, NRG serves as a clearinghouse for technical research to aid in the protection and restoration of the city's natural resources. This inventory of Brust Park was conducted in 2007 as part of NRG's commitment to improving the natural areas of New York City parks.

Brust Park is located in the section of Riverdale known as Fieldston. It was acquired by the City through condemnation on December 30, 1882. The parkland remained nameless until March 29, 1940, when Mayor Fiorello H. LaGuardia (1882-1947) designated it Brust Square in honor of Corporal Charles Brust, a soldier who died in combat during World War I. Commissioner Stern renamed the parkland Brust Park in 1997.

Brust Park was designed to fill the space bounded by West 242nd Street, Fieldston Road, and what was then Spuyten Duyvil Parkway, neighboring the Methodist Episcopal Church Home. The park increased in size in 1951 when Dash Place, a minor road dividing the park, was eliminated and the land was incorporated into parkland. A major reorganization in 1964 eliminated Fieldston Road between West 238th Street and West 242nd Street, as well as the section of West 242nd Street that lies between Fieldston Road and Greystone Avenue. In 1998, City Council Member June M. Eisland authorized \$63,681 in renovations to Brust Park, which included adding a medium tot play unit and multi-colored play equipment featuring safety surfacing.

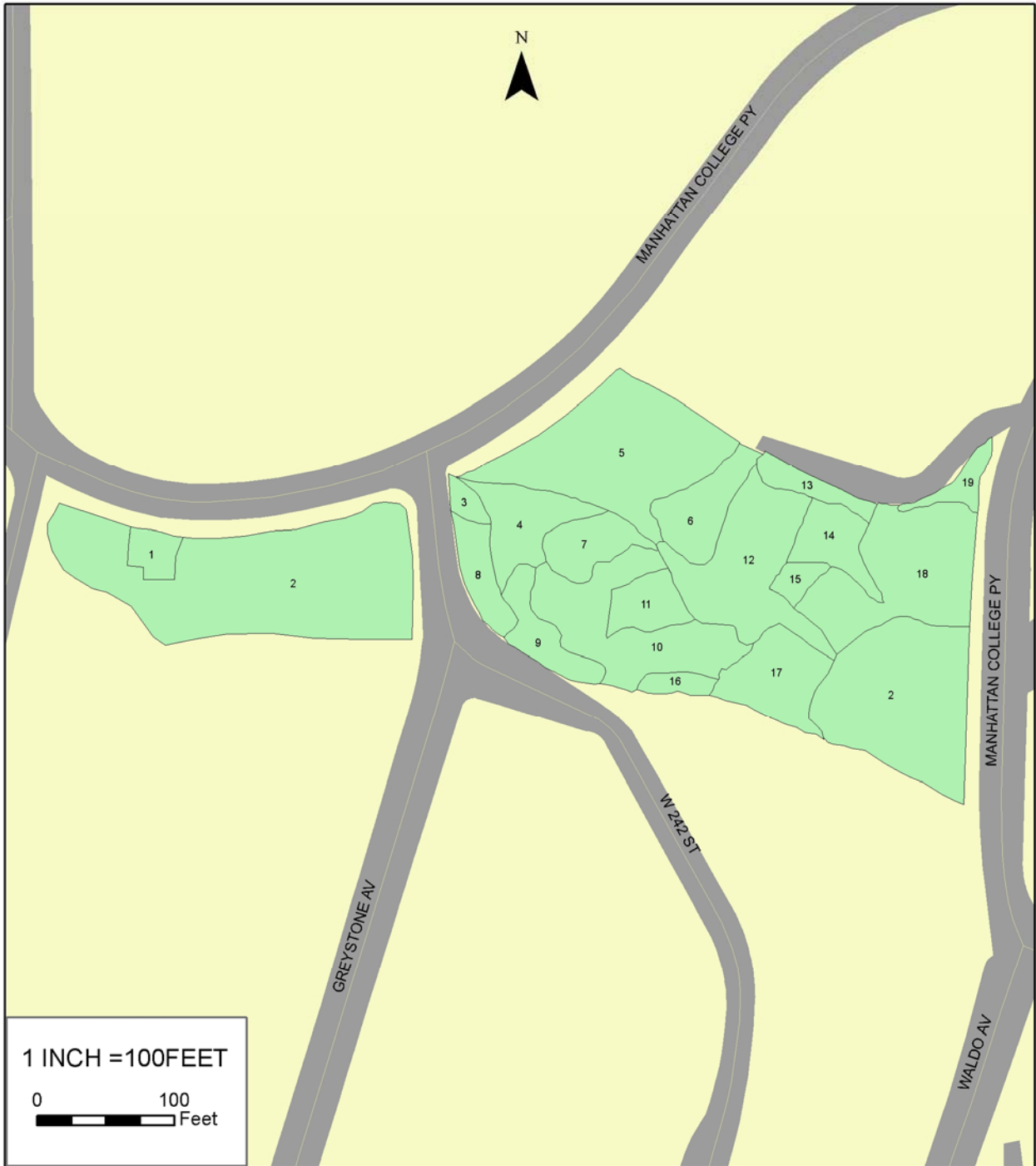
To facilitate the protection, management and restoration of Brust Park, NRG completed an inventory of the area using entitiation, a process of identifying and describing ecologically distinct plant communities. Using aerial photographs and field reconnaissance, Parks staff delineated distinct ecological entities, known as entitiation units, based on cover type, understory structure, species composition, and topography. Evidence of historical use, current use, environmental disturbance, and additional notes were also recorded for each unit. Entitiation of Brust Park resulted in a map and database that can be used to locate valuable and threatened areas. They also serve as a baseline for measuring change over time.

Entitiation

Entitiation is a type of plant community inventory well suited to the patchy environments often found in urban areas. Originally designed for European landscapes, the system was revised by NRG in 1985 for use in urban parkland. NRG has used entitiation widely and successfully to facilitate acquisition and restoration decisions. Put simply, entitiation is a process of breaking up a park into manageable parts called "entities" or

“entitation units.” Entitation units are defined using a weighted list of criteria. The first level of distinction is based on cover type (e.g. closed forest, vineland, scrub), followed by canopy species composition, understory type (e.g. herbs, vines, shrubs), and understory species composition. Additional factors, such as topography and soil condition (e.g. wet, moist, dry) are also taken into account.

To prepare for fieldwork, mapping technicians examine aerial photographs and delineate areas of similar cover. The mapping staff use the aerial information to create a strategy for covering land area. In the field, boundaries are identified as described above. For each unit, staff record the data listed above, as well as current uses, environmental disturbances, historical indicators, community stability, and comments.



1 INCH = 100 FEET

0 100 Feet

ENTITATION UNITS - AUGUST 2007
 BRUST PARK
 BRONX COUNTY, CITY OF NEW YORK

11/21/2007



**City of New York
 Parks & Recreation
 Natural Resources Group**

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Brust Park Entitation Unit Descriptions, Surveyed August 2007

Unit: 1
Acreage: 0.03
Mgmt. Concern: No

<u>Site:</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbances</u>
Scarcely vegetated					Sports	
Level						
Dry						

Comments:
 This unit is the playground with surrounding benches.

Unit: 2
Acreage: 0.67
Mgmt. Concern: Yes

<u>Site:</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbances</u>
Herbaceous Deciduous Hemicryptophytes Slope Dry/Moist	Cool season grass	<5'	yes		Picnic Foot traffic	

Comments:
 This unit is all managed lawns. Other species present in at least one of these units include: London planetree, bitternut hickory, white mulberry, sweetgum, black birch, red oak, tulip poplar, sycamore, white pine, American elm, forsythia, burning bush, arrowwood viburnum (being overtaken by wild rose) (MC), a patch of Japanese knotweed, wintercreeper, bindweed, Virginia creeper (along fence), burdock, wood sorrel, common plantain, and an ornamental planting.

Brust Park Entitation Unit Descriptions, Surveyed August 2007

Unit: 3
Acreage: 0.01
Mgmt. Concern: No

<u>Site:</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbances</u>
Herbaceous	Dayflower, Asiatic	<5'	yes			
Deciduous	Nightshade, enchanter's	<5'	no			
Hemicryptophytes	Ivy, poison	<5'	no			
Slope						
Dry/Moist						

Comments:

This is a small unit on a slope at the corner of Greystone Avenue and Manhattan College Parkway. Other species present include: Virginia creeper.

Unit: 4
Acreage: 0.08
Mgmt. Concern: No

<u>Site:</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbances</u>
Closed Forest	Spicebush	<5' & 5-30'	no			
Deciduous	Rose, multiflora	<5' & 5-30'	yes			
Chamaephytes						
Slope						
Dry/Moist						

Comments:

This unit is dominated by spicebush and multiflora rose. Red oak and Norway maple canopy from neighboring units form a canopy over this unit, however the trunks are not within this unit. This unit is bordered by a Norway maple unit. Other species present include: Siberian elm, white mulberry, hackberry, black cherry, bitternut hickory sapling, rose-of-Sharon, Amur honeysuckle, wineberry, poison ivy, enchanter's nightshade, Oriental bittersweet, Virginia knotweed, periwinkle, garlic mustard, and pokeweed.

Brust Park Entitation Unit Descriptions, Surveyed August 2007

Unit: 5
Acreage: 0.26
Mgmt. Concern: No

<u>Site:</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbances</u>
Closed Forest	Norway maple	all	yes	Foundation	Foot traffic	Trash
Deciduous	Oak, red	>30'	no			
Phanerophytes	Pine, white	>30'	no			
Slope						
Dry/Moist						

Comments:

This unit is dominated by Norway maple in the understory and is located on a slope. It is partially bordered by Manhattan College Parkway. A staircase runs through the middle of the unit. On one side of the stairs is a swale. The herbaceous layer is sparse with patches of periwinkle and poison ivy. Other species present include: 1 black locust, green ash, 1 Ailanthus (>30'), slippery elm, horse chestnut, 1 sweetgum (>30'), 1 tulip polar (>30'), red oak (>30'), white pine (>30'), smartweed, garlic mustard, black jetbead, and common nightshade.

Unit: 6
Acreage: 0.07
Mgmt. Concern: No

<u>Site:</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbances</u>
Woodland	Oak, red	>30'	no			Trash
Deciduous	Cherry, black	<5' & 5-30'	no			
Phanerophytes	Spicebush	<5' & 5-30'	no			
Slope	Periwinkle	<5'	yes			
Dry/Moist	Ivy, poison	<5'	no			

Comments:

This is a small unit dominated by ~30' red oaks with spicebush and black cherry in the understory. It is located west of a red oak/ Norway maple forest and East of a red oak/ black cherry forest, which differs from this unit because of the presence of sweetgum. Other species present include: horse chestnut, ash sp (<5'), bitternut hickory (<5'), porcelainberry, Oriental bittersweet, wineberry, wood aster, goldenrod, and garlic mustard.

Brust Park Entitation Unit Descriptions, Surveyed August 2007

Unit: 7
Acreage: 0.05
Mgmt. Concern: No

<u>Site:</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbances</u>
Herbaceous	Nightshade, enchanter's	<5'	no			Trash
Deciduous	Periwinkle	<5'	yes			
Hemicryptophytes						
Slope						
Wet						

Comments:

This unit has almost no understory. A few saplings are in the unit. The canopy from surrounding units blocks some sunlight from entering the unit. Water is dripping down a rock outcrop. A drain pipe is present. Other species present include: slippery elm sapling, Norway maple sapling, sweet pepperbush, porcelainberry, English ivy, poison ivy, Virginia creeper, garlic mustard, wood aster, and Virginia knotweed.

Unit: 8
Acreage: 0.05
Mgmt. Concern: No

<u>Site:</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbances</u>
Closed Forest	Norway maple	<5' & 5-30'	yes			
Deciduous	Oak, red	>30'	no			
Hemicryptophytes	Osage Orange	5'-30'	yes			
Slope	Mulberry, white	5'-30'	yes			
Dry/Moist						

Comments:

This is a small unit dominated by Norway maple. One large red oak, 1 large white mulberry, and 1 large osage orange are also present. The unit bordered by Greystone Avenue. Other species present include: crab apple, Virginia creeper, Oriental bittersweet, poison ivy, Asiatic dayflower, and garlic mustard.

Brust Park Entitation Unit Descriptions, Surveyed August 2007

Unit: 9
Acreage: 0.05
Mgmt. Concern: Yes

<u>Site:</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbances</u>
Vineland	Bittersweet, Oriental	<5'	yes			
Deciduous	Ivy, poison	<5'	no			
Lianas						
Slope						
Dry/Moist						

Comments:

This is a large vineland that covers large sloping rocks and a few trees. It is bordered by West 242nd Street. Other species present include: white mulberry, shagbark hickory, slippery elm, red oak, Norway maple, black cherry, rose-of-Sharon, porcelainberry, Boston ivy, Asiatic dayflower, garlic mustard, ragweed, wineberry, and wood aster. MC: because of invasive vines.

Unit: 10
Acreage: 0.17
Mgmt. Concern: Yes

<u>Site:</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbances</u>
Closed Forest	Norway maple	<5' & 5-30'	yes			
Deciduous	Cherry, black	all	no			
Phanerophytes	Spicebush	<5' & 5-30'	no			
Slope	Virginia creeper	<5'	no			
Dry/Moist	Ivy, poison	<5'	no			
	Solomon's seal, false	<5'	no			

Comments:

This is a u shaped unit, which surrounds a vineland. A few >30' trees are present. The understory is Norway maple, black cherry, and spicebush. One side of the unit has more lianas and the other side has more false Solomon's seal and spicebush. Other species present include: bitternut hickory saplings, red oak, slippery elm, sassafras, pin oak, horse chestnut, crab apple, ash sp., Rubus, black jetbead, Amur honeysuckle, wineberry, English ivy, Virginia creeper, Oriental bittersweet, periwinkle, Virginia knotweed, garlic mustard, and pokeweed. A hollowed out tree stump is present. MC: because of invasive vines.

Brust Park Entitation Unit Descriptions, Surveyed August 2007

Unit: 11
Acreage: 0.05
Mgmt. Concern: Yes

<u>Site:</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbances</u>
Vineland Deciduous Lianas Slope Dry/Moist	Bittersweet, Oriental	<5' & 5-30'	yes			

Comments:

This is a small clearing in the forest canopy where vines have taken over. Other species present include: spicebush, and a large fallen tree that is cracked in half. One half is still standing. MC: because of invasive vines.

Unit: 12
Acreage: 0.17
Mgmt. Concern: No

<u>Site:</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbances</u>
Closed Forest Deciduous Chamaephytes Undulating Dry/Moist	Oak, red Cherry, black Spicebush Sweetgum Ivy, poison	>30' <5' & 5-30' <5' & 5-30' all <5'	no no no no no	stream		Trash

Comments:

This unit is dominated by >30' red oaks with black cherry, spice bush, and sweetgum in the understory. A few >30' sweetgum are also in the unit. The rock lined stream runs through this unit. Other species present include: tulip poplar, horse chestnut, Norway maple, white pine, hackberry, black locust sapling, bitternut hickory sapling, porcelainberry, Virginia creeper, garlic mustard, smartweed, black nightshade, wineberry, false Solomon's seal, periwinkle, enchanter's nightshade, wintercreeper, burdock, and wood aster.

Brust Park Entitation Unit Descriptions, Surveyed August 2007

Unit: 13
Acreage: 0.03
Mgmt. Concern: Yes

<u>Site:</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbances</u>
Closed Forest	Oak, red	>30'	no			
Deciduous	Jet black bead	<5'	yes			
Chamaephytes						
Slope						
Dry/Moist						

Comments:

This unit is a strip of black jetbead under a red oak/ sweetgum/ slippery elm canopy. There are a few trees greater than 30' in the unit but the presence of black jetbead is what makes this unit unique. It is located along the driveway for the Methodist Church. Other species present include: Norway maple, spicebush, multiflora rose, Virginia creeper, cucumber vine, poison ivy, Oriental bittersweet, wood aster, Virginia knotweed, and wineberry. MC: Because of invasives.

Unit: 14
Acreage: 0.05
Mgmt. Concern: No

<u>Site:</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbances</u>
Closed Forest	Elm, slippery	<5' & 5-30'	no			
Deciduous	Sweetgum	5'-30'	no			
Lianas	Ivy, English	<5'	yes			
Slope						
Dry/Moist						

Comments:

This is a small unit that is located north of the stream. There is an equal mix of slippery elm and sweetgum with English ivy in the herbaceous layer. Other species present include: black cherry, poison ivy, Virginia creeper, and Virginia knotweed.

Brust Park Entitation Unit Descriptions, Surveyed August 2007

Unit: 15
Acreage: 0.02
Mgmt. Concern: Yes

<u>Site:</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbances</u>
Vineland	Bittersweet, Oriental	<5'	yes			
Deciduous	Knotweed, Virginia	<5'	no			
Lianas						
Slope						
Dry/Moist						

Comments:

This unit is a vineland dominated by Oriental bittersweet with Virginia knotweed. It is located south of a red oak forest and east of a staircase. Other species present include: Norway maple saplings, hackberry saplings, multiflora rose, porcelainberry, poison ivy, and enchanter's nightshade. MC: because of invasive vines.

Unit: 16
Acreage: 0.02
Mgmt. Concern: No

<u>Site:</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbances</u>
Scrub	Wineberry	<5'	yes			
Deciduous	Mustard, garlic	<5'	yes			
Chamaephytes						
Slope						
Dry/Moist						

Comments:

This unit is a strip of wineberry along the south fence bordering the park. Other species present include: a few young Ailanthus, 1 black locust (~10'), slippery elm, English ivy, and pokeweed.

Brust Park Entitation Unit Descriptions, Surveyed August 2007

Unit: 17
Acreage: 0.09
Mgmt. Concern: Yes

<u>Site:</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbances</u>
Vineland	Porcelain berry	<5'	yes			
Deciduous	Oriental bittersweet	<5'	yes			
Lianas	Ivy, poison	<5'	no			
Slope	Virginia creeper	<5'	no			
Dry/Moist						

Comments:

This unit is a vineland that slopes from a closed forest to the managed lawn. Some large rocks are on the slope. There is a cut black cherry at the top of the unit. Other species present include: a hickory sapling, Norway maple saplings, black cherry saplings, a slippery elm sapling, spicebush, wineberry, Virginia knotweed, and garlic mustard. MC: because of invasive vines.

Unit: 18
Acreage: 0.2
Mgmt. Concern: Yes

<u>Site:</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbances</u>
Closed Forest	Elm, slippery	>30' & 5-30'	no	Pond	Foot Traffic	
Deciduous	Porcelain berry	<5'	yes			
Lianas	Ivy, poison	<5'	no			
Level	Knotweed, Virginia	<5'	no			
Dry/Moist	Periwinkle	<5'	yes			

Comments:

This unit is a closed forest located next to a rock lined lawn and Manhattan College Road. The herbaceous layer is patchy in dominance with some spots of detritus. There may be a pond within the unit during rainier seasons. Other species present include: patches of enchanter's nightshade, multiflora rose, and wild grape, sweetgum, tulip poplar, black cherry, white mulberry, bitternut hickory, ash, red oak, 1 Ailanthus, Norway maple, hedge maple, Amur honeysuckle, Oriental bittersweet, burdock, pokeweed, Asiatic dayflower, bittersweet nightshade, and garlic mustard. MC: because of invasives.

Brust Park Entitation Unit Descriptions, Surveyed August 2007

Unit: 19
Acreage: 0.02
Mgmt. Concern: Yes

<u>Site:</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbances</u>
Closed Forest	Sweetgum	5'-30'	no			
Deciduous	Rose-of-Sharon	<5' & 5-30'	yes			
Chamaephytes	Euonymus, evergreen	<5' & 5-30'	yes			
Level						
Dry/Moist						

Comments:

This is a small closed forest dominated by sweetgum and ornamental species. It is located at the NE corner of the park. Other species present include: sycamore maple, wild rose, black jetbead, porcelainberry, English ivy, Oriental bittersweet, poison ivy, Virginia creeper, pokeweed, black nightshade, smartweed, garlic mustard, and burdock. MC: because of invasives, such as black jetbead, porcelainberry, multiflora rose and Oriental bittersweet.

APPENDIX: Glossary

Many of these definitions are adapted from Marge Garguillo's unpublished *Plants of New York City Natural Areas: An ecological manual* (2005).

Chamaephyte: Mature branch or shoot system remaining perennially less than or equal to 100in above ground. Buds are produced on aerial branches close to the soil. (e.g. shrubs)

Closed forest: An area formed by trees at least 15 feet tall with interlocking crowns and at least 80% canopy closure.

Competition: The ability of one plant to overwhelm another plant by shading it out or otherwise overwhelming it.

Deciduous: Majority of trees shed their foliage in the autumn months.

Depression: A hollow, or low point, as compared to the surrounding topography. May or may not contain water.

Dominant: The most abundant plants in a particular plant community. A **codominant** plant is about equally as abundant as the dominant species.

Exotic: A species that does not naturally inhabit a specific area. An exotic plant may or may not be invasive where it is introduced.

Exotic planting: A gardened area where non-native species (e.g. privet, periwinkle) are tended.

Full-crown tree: Initially open-grown and free of competition: currently very large with a dominating crown.

Geophyte: Plants with buds or shoots surviving below the ground (rhizomes, bulbs, stem tubers, root tubers.)

Graminoid: Grasses and grass-like plants.

Hedgerow: Evidence of trees or shrubs planted in line i.e., maple or privet along road or path.

Hemicryptophyte: Shoots die back to ground level.

Herb: Plants without woody tissues that die back to the ground in the winter. This classification is usually applied to broad-leaved plants rather than grasses, but includes grasses for the purpose of entitation.

Herbaceous community: An area where grasses, grasslike plants, and herbaceous plants are predominant. Woody plants may be sparingly present, but cover less than 30% of area.

Intertidal Communities: Substrate is exposed and flooded by tides, includes the associated splash zone.

Invasive plant: A plant species that grows and reproduces without constraint, crowding or shading out other plants. The term is usually applied to plants that are not native to the given region. Invasiveness in a plant that is native to the region is rare and probably caused by unusual circumstances.

Knoll: A small isolated hillock.

Landfill: Topography altered by previous filling or dumping: i.e., while building a road or altering a wetland area. Look for rubble on the soil surface or sudden changes in grade.

Lianas: Vascular plants needing support, rooting in the ground permanently (vines).

Native plant: Plants that were growing in this region before Europeans came to North America. Native plants are adapted to the climate and soils of their region. They have relationships with birds, mammals, insects, and fungi and are integrated into the ecology of the region. New York City's native plants come from seed that spread northward after the last glaciers melted thousands of years ago.

Ornamental: Plants used as horticultural specimens in gardens or developed parks, not intended to reproduce or be part of a natural plant community. Very often they are non-native plants.

Phanerophyte: Plants that grow taller than 100 in. or whose shoots do not die back periodically to that height (e.g., trees).

Scrub: A shrubland or thicket, mainly composed of woody plants 1.5 to 15 feet tall.

Slope: Ground that forms a natural or artificial incline.

Soil compaction: Increasing soil density and decreasing porosity due to application of mechanical forces to the soil: i.e. due to vehicle, horse, or foot traffic.

Species: A group of organisms that can interbreed to produce fertile young.

Understory: Habitat below the tree canopy of a forest. The understory is a plant community of tree saplings, shrubs, herbs, graminoids, and mosses that can live in shade or part shade.

Undulating: The area has a wavy surface. Its neither a slope, a level area, or a depression, but rather a combination of all three.

Vineland: An area formed by at least 30% vines. Vines may be supported by vegetation, artificial means or ground surface. Often occurs on the forest or shrub border.

Woodland: An area formed by trees at least 15 feet tall, with most of their crowns not touching each other, but at least 30% canopy closure.