

# **Natural Area Mapping and Inventory of Henry Hudson Park 2007 Survey**



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# Henry Hudson Park Natural Area Mapping & Inventory

9.81 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 Henry Hudson Park was conducted in 2007 as part of NRG's commitment to improving the natural areas of New York City parks.

Henry Hudson Park, named after the famed English explorer, is located in the Bronx, between Palisade Avenue and Independence Avenue. It is bisected by Kappock Street. In 1909 plans were made to erect a monument to Hudson, funds were raised and ground was broken.

Although Karl Bitter prepared a plaster model of Henry Hudson, and the massive Doric column was erected by 1912, the project was postponed when funds ran out. Robert Moses revived the project in 1935. Parks & Recreation acquired the site of the unbuilt bridge approach and additional land between 1935 and 1937. The entire site was named Henry Hudson Memorial Park and improved with landscaping, paths, benches, iron fences, and a playground. The monument was completed and dedicated in 1938. Sculptor Karl H. Gruppe, a student of Bitter's (who had died in 1915), redesigned the figure of Hudson and created the two bas-reliefs for the base of the column. Clad in seafaring garb, Hudson stands as if balancing himself on a ship's deck. The relief on the south side depicts Hudson receiving his commission from the Dutch East India Company, and the relief on the north side portrays the first fur trading post on Manhattan.

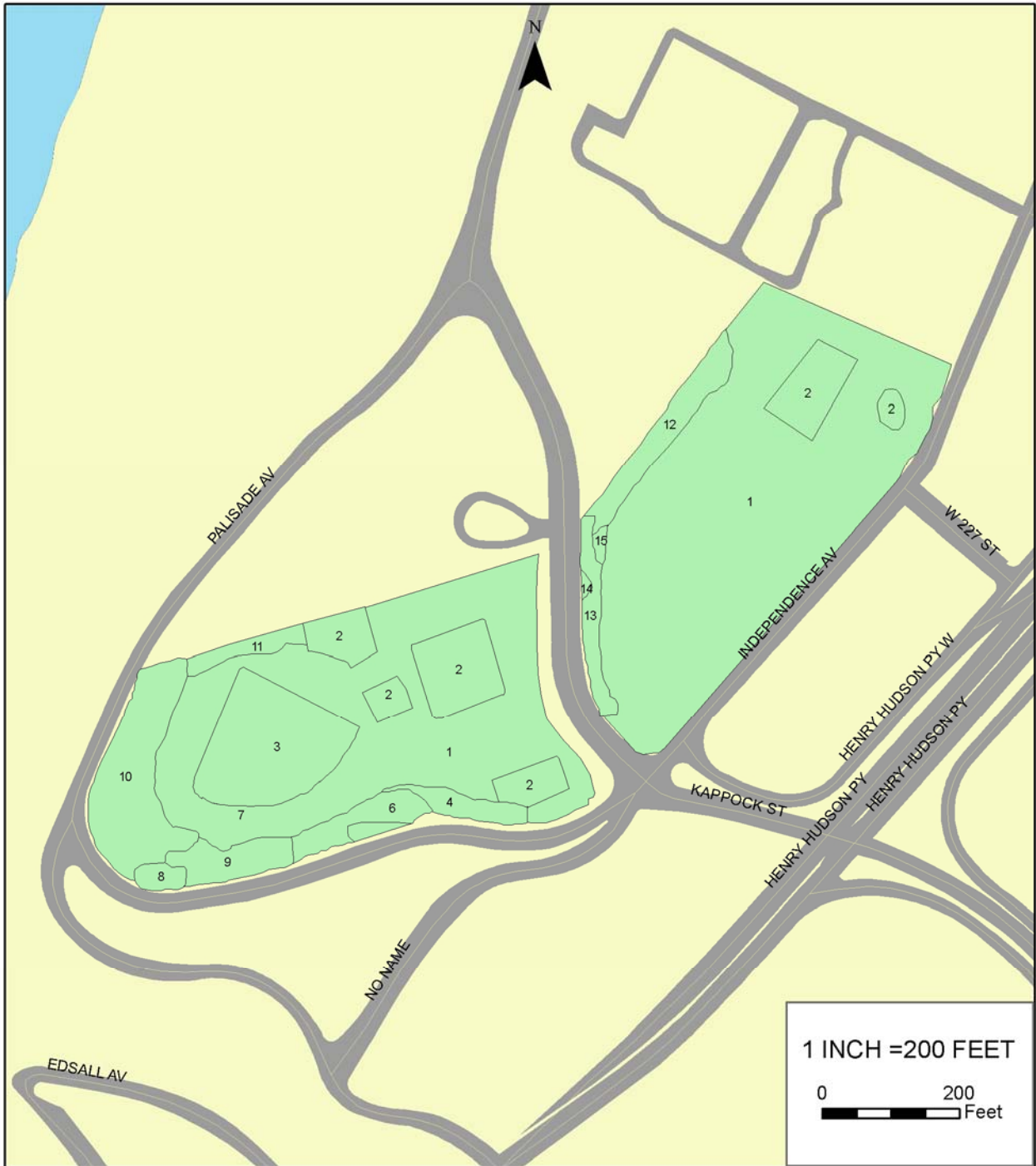
In 1989 Henry Hudson Park underwent a capital reconstruction which provided new playground equipment, restored the monument plaza, and improved the paths and stairways. An extensive restoration of the park's ballfields and playgrounds was completed in 1995, including new swings, play equipment, a compass rosette, a new scoreboard for the baseball field, and a baseball player weathervane for atop the comfort station. In 2003 Parks & Recreation renamed the lower section of the park to "Paul's Park" in honor of Paul Cymerman, who dedicated efforts to keep the park clean and safe.

To facilitate the protection, management and restoration of Henry Hudson 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 Henry Hudson 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.

## *Entitation*

Entitation 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 entitation widely and successfully to facilitate acquisition and restoration decisions. Put simply, entitation 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.



**ENTITATION UNITS - AUGUST 2007  
HENRY HUDSON PARK  
BRONX COUNTY, CITY OF NEW YORK**

11/21/2007



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2007.21.11.01

Henry Hudson Park Entitation Unit Descriptions, Surveyed August 2007

**Unit:** 1  
**Acreage:** 6.32  
**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	Cool season grass	<5'	yes	Exotic planting	Foot traffic	
Deciduous	Oak, pin	>30' & 5-30'	no	manhole		
Hemicryptophytes	Oak, red	>30' & 5-30'	no			
Undulating	Sweetgum	>30' & 5-30'	no			
Dry/Moist	Pine, white	>30' & 5-30'	no			

**Comments:**

This unit is located on both sides of Kappock Street and includes all of the mowed lawn with associated trees, including the street trees associated with the park along Kappock Street and Independence Avenue. Within the unit there are benches and paved paths. Tree species include: scarlet oak, pin oak, red oak, linden, little leaf linden, weeping cherry, honey locust, black locust, hawthorn, magnolia sp., crab apple, redbud, mulberry sapling, white pine, sweetgum, black cherry, sycamore maple, beech, London planetree, and white mulberry. Other species present include: wood aster, mugwort, English plantain, dandelion, red clover, smartweed, and porcelainberry. A small section of ornamentals are located at the NE entrance of the park.

**Unit:** 2  
**Acreage:** 0.89  
**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

**Comments:**

This unit includes all paved recreational areas, monuments, and buildings such as the Henry Hudson memorial statue, Paul's park playground, basketball courts, handball courts, and restrooms.

Henry Hudson Park Entitation Unit Descriptions, Surveyed August 2007

**Unit:** 3  
**Acreage:** 0.71  
**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 Deciduous Hemicryptophytes Level Dry/Moist	Cool season grass	<5'	yes		Sports	

**Comments:**

This unit includes all sports fields. E.g. baseball fields. Other species: white clover, mulberry sapling, porcelainberry, and Oriental bittersweet. Vines are climbing the fence around the baseball diamond. (MC)

**Unit:** 4  
**Acreage:** 0.12  
**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 Deciduous Hemicryptophytes Slope Dry/Moist	Mugwort Dock, bitter Knapweed, black	<5' <5' <5'	yes yes yes			

**Comments:**

This is a small herbaceous unit located on the hillside next to a playground, on Independence Avenue. The composition is a patchy mix of mugwort, bitter dock, knapweed and other species. Other species present include: two London planetrees, a large cluster of white mulberry saplings, English plantain, common mallow, white clover, horseweed, lady's thumb, common plantain, dandelion, poorman's pepper, cool season grass, and a sedge sp.

Henry Hudson Park Entitation Unit Descriptions, Surveyed August 2007

**Unit:** 5  
**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>
Closed Forest	Locust, black	<5' & 5-30'	yes			
Deciduous	Box Elder	<5' & 5-30'	no			
Hemicryptophytes	Burdock, common	<5'	yes			
Slope	Aster, white wood	<5'	no			
Dry/Moist	Virginia creeper	<5'	no			

**Comments:**

This is a small unit on a slope bordered by the sidewalk on Independence Avenue and an interior paved trail. Cribbing with railroad ties has been done along the paved trail. Other species present include: Norway maple sapling, white mulberry sapling, garlic mustard, wood sorrel, common nightshade, sedge species, dandelion, and crab grass.

**Unit:** 6  
**Acreage:** 0.18  
**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	Locust, black	<5' & 5-30'	yes		Foot traffic	
Deciduous	Norway maple	<5' & 5-30'	yes			
Chamaephytes	Rose, multiflora	<5'	yes			
Slope	Honeysuckle, Amur	<5' & 5-30'	yes			
Dry/Moist						

**Comments:**

This unit starts at one side of a paved pathway with cribbing and crosses over the pathway to the other side. There is no ground cover in most of the unit except on the edges of the unit. Other species present include: Ailanthus, white mulberry, box elder, black cherry, hawthorn, honey locust, English ivy, porcelainberry, wood aster, garlic mustard, burdock, goldenrod, black knapweed, goldenrod, and mugwort.

Henry Hudson Park Entitation Unit Descriptions, Surveyed August 2007

**Unit:** 7  
**Acreage:** 0.11  
**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	Mulberry, white	<5' & 5-30'	yes			
Deciduous	Norway maple	<5' & 5-30'	yes			
Chamaephytes	Honeysuckle, Amur	<5' & 5-30'	yes			
Slope	Rose, multiflora	<5'	yes			
Dry/Moist						

**Comments:**

This is a closed forest that is bordered by the south fence of a baseball field and a paved path. The west side of the unit has more trees under 15'. English ivy and poison ivy are climbing the baseball fence. Other species present include: London planetree, Ailanthus, Siberian elm sapling, black cherry sapling, garlic mustard, black nightshade, burdock, and pokeweed.

**Unit:** 8  
**Acreage:** 0.06  
**Mgmt. Concern:** Yes

<u>Site:</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbances</u>
Woodland	Elm, Siberian	>30' & 5-30'	yes			
Deciduous	Yam- leaved clematis	<5' & 5-30'	yes			
Lianas						
Slope						
Dry/Moist						

**Comments:**

This unit is on a rocky hillside. There are many Siberian elms with yam-leaved clematis climbing trees and down rocks. Other species present include: box elder, hackberry, multiflora rose, Amur honeysuckle, English ivy, pokeweed, and garlic mustard. MC: because of invasive yam-leaved clematis.



Henry Hudson Park Entitation Unit Descriptions, Surveyed August 2007

**Unit:** 9  
**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	Norway maple	<5' & 5-30'	yes	Full-crown tree	Foot traffic	
Deciduous	Honeysuckle, Amur	<5' & 5-30'	yes			
Chamaephytes						
Slope						
Dry/Moist						

**Comments:**

This unit is located between Independence Avenue and a paved trail. This unit has a large scarlet oak, a cluster of Ailanthus, and porcelainberry hanging from a few trees. Other species present include: box elder, hackberry, black cherry, white mulberry, poison ivy, English ivy, smartweed, and garlic mustard. MC: because of invasive porcelainberry.

**Unit:** 10  
**Acreage:** 0.63  
**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, Siberian	all	yes		Foot traffic	
Deciduous	Norway maple	<5' & 5-30'	yes			
Hemicryptophytes	Linden	<5' & 5-30'	no			
Slope	Box Elder	<5' & 5-30'	no			
Dry/Moist	Honeysuckle, Amur	<5' & 5-30'	yes			
	Rose, multiflora	<5'	yes			

**Comments:**

This unit slopes from the paved path by the baseball diamond to Palisade Avenue. It is bordered on one side by a property fence. A small fence is in front of a section of burdock. Other species present include: pin oak, white mulberry, hackberry, sycamore maple, black locust, crab apple, Ailanthus, slippery elm, bush honeysuckle, forsythia, privet, black jetbead, poison ivy, English ivy, pokeweed, burdock, garlic mustard, hosta, common nightshade, and lamb's quarters.

Henry Hudson Park Entitation Unit Descriptions, Surveyed August 2007

**Unit:** 11  
**Acreage:** 0.1  
**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	Mulberry, white	<5' & 5-30'	yes			
Deciduous	Sycamore maple	<5' & 5-30'	yes			
Hemicryptophytes						
Slope						
Dry/Moist						

**Comments:**

This is a thin strip of white mulberry and sycamore maple, which is bordered by which is bordered by the fence of the adjacent facing property ,a paved path, the handball court, and unit 10. A large pin oak marks the side of the unit closest to unit 10. Other species present include: hackberry, Norway maple, box elder, wineberry, porcelainberry, English ivy, pokeweed, common plantain, burdock, smartweed, wood aster, wood sorrel, mugwort, garlic mustard, wineberry, beggar's tick, and lamb's quarters.

**Unit:** 12  
**Acreage:** 0.28  
**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	Sycamore maple	<5' & 5-30'	yes			
Geophytes	Oak, red	>30'	no			
Slope	Mustard, garlic	<5'	yes			
Dry/Moist	Smartweed	<5'	yes			

**Comments:**

This unit is a strip of land that is bordered by a property fence and a managed lawn. Other species present include: black cherry, black locust, white pine, box elder, red oak, dead Ailanthus, Amur honeysuckle, multiflora rose, poison ivy, Virginia creeper, pokeweed, aster sp., Asiatic dayflower, and white snakeroot.

Henry Hudson Park Entitation Unit Descriptions, Surveyed August 2007

**Unit:** 13  
**Acreage:** 0.15  
**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	Locust, black	all	yes			
Deciduous	Norway maple	<5' & 5-30'	yes			
Hemicryptophytes	Mulberry, white	<5' & 5-30'	yes			
Slope	Oak, red	5'-30'	no			
Dry/Moist	Oak, pin	5'-30'	no			

**Comments:**

This unit is on the street side of the fence and is bordered by the sidewalk. It is a strip of woods along a retaining wall. There is a pipe coming out of the wall. Other species present include: black oak, Rhamnus cathartica (common buckthorn), black cherry, hackberry, crab apple, Amur honeysuckle, multiflora rose, Virginia creeper, poison ivy, Boston ivy, Asiatic dayflower, wood sorrel, white snakeroot, black nightshade, garlic mustard, lamb's quarter, wood aster, pokeweed, smartweed, mugwort, and foxtail.

**Unit:** 14  
**Acreage:** 0.01  
**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	Porcelainberry	<5' & 5-30'	yes			
Deciduous						
Phanerophytes						
Level						
Dry/Moist						

**Comments:**

This is a small vineland covering Rhamnus cathartica (common buckthorn) and white mulberry. It is just below the rock wall along the sidewalk. MC: because of invasive porcelainberry.

Henry Hudson 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	Porcelainberry	<5' & 5-30'	yes			
Deciduous	Honeysuckle, Amur	5'-30'	yes			
Chamaephytes	Hackberry	5'-30'	no			
Level	Mustard, garlic	<5'	yes			
Dry/Moist						

**Comments:**

This is a very small vineland over an Amur honeysuckle, a hackberry, a Rhamnus cathartica sapling, and garlic mustard. It is located along a property fence. MC: because of invasives such as porcelainberry, Amur honeysuckle, and garlic mustard.

## **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.