

Natural Area Mapping and Inventory of Frank S. Hackett Park 2007 Survey



Prepared by the Natural Resources Group
Michael R. Bloomberg, Mayor
Adrian Benepe, Commissioner
Bill Tai, Director

January 8, 2008

Frank S. Hackett Park Natural Area Mapping & Inventory

2.13 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 Frank S. Hackett Park was conducted in 2007 as part of NRG's commitment to improving the natural areas of New York City parks.

Bound by West 254th Street, Riverdale Avenue, and the Henry Hudson Parkway, this park honors the achievements of educator Dr. Frank S. Hackett (1878-1952). In January 1935, the City of New York acquired this property by condemnation. Included in the acquisition were the lands that would eventually become the Henry Hudson Parkway. Two years later, in September, Parks assumed jurisdiction over the Hackett Park property. The following month, Parks Commissioner and Chairman of the Triborough Bridge and Tunnel Authority Robert Moses (1888-1981) completed the Henry Hudson Parkway. In 1955, the City Council named the property Frank S. Hackett Park. However, the park was not dedicated until May 1956. Today, this hilly park features winding, lighted paths that traverse lush vegetation. The park's trees species include honey locust, sweet gum, red maple, oak, and hickory. The center of the park features both a dog run and plaque in honor of the property's namesake.

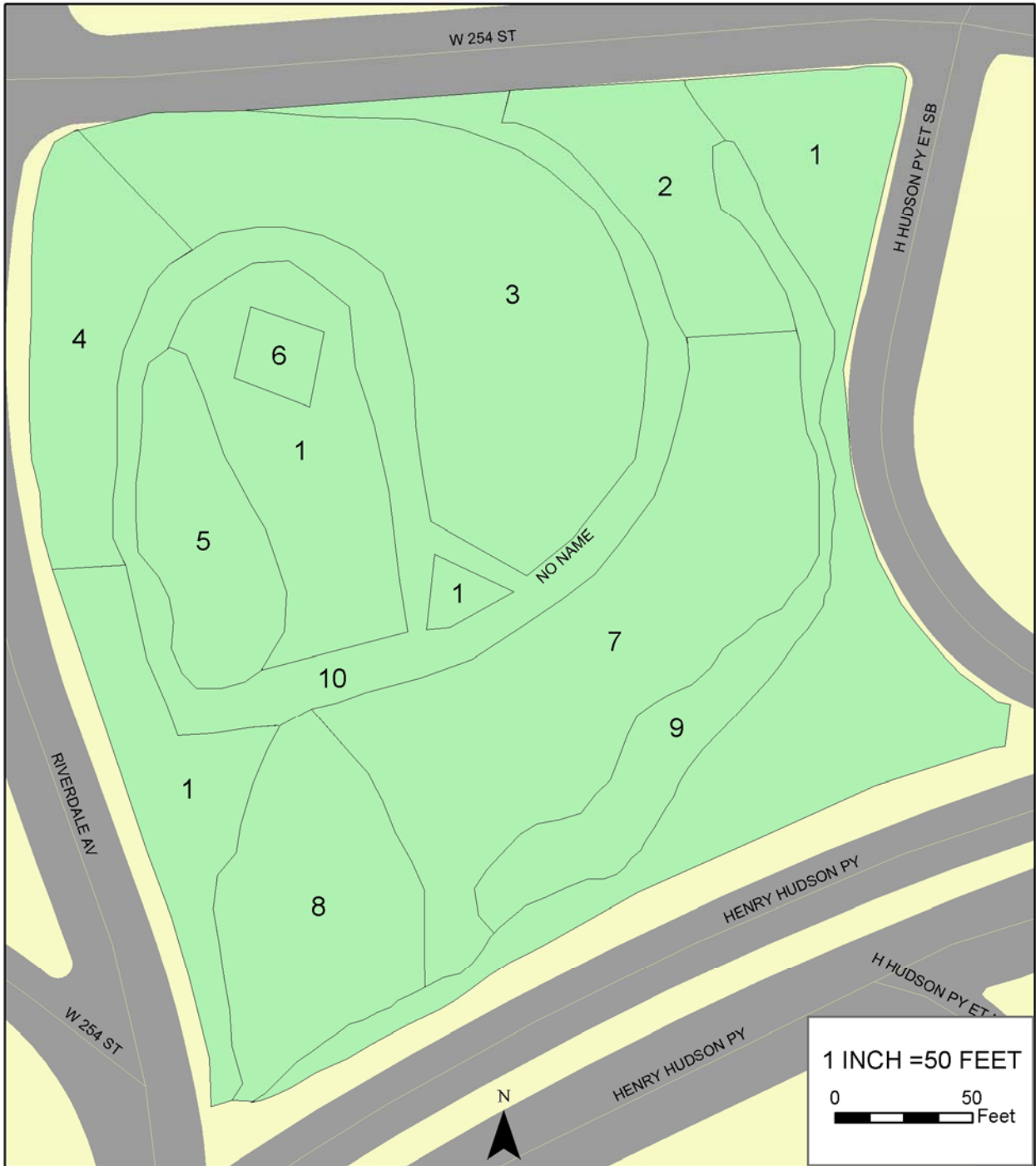
To facilitate the protection, management and restoration of Frank S. Hackett Park, NRG completed an inventory of the area using entitiation, a process of identifying and describing ecologically distinct plant communities. Using aerial photographs and field reconnaissance, Parks staff delineated distinct 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 Frank S. Hackett 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.



**ENTITATION UNITS - AUGUST 2007
FRANK S. HACKETT PARK
BRONX COUNTY, CITY OF NEW YORK**

11/21/2007



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

Arsenal North, 1234 Fifth Avenue, New York, NY 10029

Michael R. Bloomberg, Mayor
Adrian Benepe, Commissioner
Bill Tai, Director
Tim Wenskus, Deputy Director
Craig Mandel, GIS/ Data Manager
April Bisner, Project Associate
Joshua Nakash, Inventory Monitoring Technician
www.nyc.gov/parks

2007.21.11.01

Frank S. Hackett Entitation Unit Descriptions, Surveyed August 2007

Unit: 1
Acreage: 0.57
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		manhole	Trash

Comments:

This unit includes all mowed lawns with associated trees. Other species present include: red oak, chestnut oak, pin oak, sweet gum, black cherry, crab apple, black locust, white oak, red clover, wood sorrel, black knapweed, common plantain, dandelion, wood aster, smartweed, lamb's quarter, mallow, and garlic mustard.

Unit: 2
Acreage: 0.10
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 Phanerophytes Slope Dry/Moist	Norway maple	5'-30'	yes			Trash

Comments:

This unit is a small closed forest dominated by Norway maple with a few other species. To the North the unit is bordered by W 254th Street. Other species present include: slippery elm, sweetgum, pin oak, black locust saplings, bitternut hickory saplings, Amur honeysuckle, and poison ivy.

Frank S. Hackett Entitation Unit Descriptions, Surveyed August 2007

Unit: 3
Acreage: 0.36
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			Trash
Deciduous	Cherry, black	<5' & 5-30'	no			
Hemicryptophytes	Locust, black	<5' & 5-30'	yes			
Slope	Oak, pin	5-30'	no			
Dry/Moist						

Comments:

This is a closed forest with dominant trees as listed above. Other species present include: bitternut hickory, ash species, silver maple, red oak, multiflora rose, Amur honeysuckle, poison ivy, Japanese honeysuckle, cat brier, Virginia creeper, wood aster, and true and false Solomon seal,

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>
Closed Forest	Locust, black	all	yes			
Deciduous	Norway maple	<5' & 5-30'	yes			
Hemicryptophytes	Mulberry, white	<5' & 5-30'	yes			
Slope	Aster, white wood	<5'	no			
Dry/Moist	periwinkle	<5'	yes			
	smartweed	<5'	yes			

Comments:

This is a closed forest with sections of wood aster, periwinkle, and smartweed dominance in the understory. It is bordered to the west by Riverdale Avenue. Other species present include: bitternut hickory, sweetgum, red oak, pin oak, sycamore maple, dogwood sp., multiflora rose, Amur honeysuckle, Virginia creeper, Oriental bittersweet, poison ivy, Japanese honeysuckle, wood sorrel, Asiatic dayflower, garlic mustard, pokeweed, and knapweed.

Frank S. Hackett Entitation Unit Descriptions, Surveyed August 2007

Unit: 5
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	Locust, black	<5' & >30'	yes			
Deciduous	Cherry, black	<5' & 5-30'	no			
Hemicryptophytes	Norway maple	<5' & 5-30'	yes			
Level	Aster, white wood	<5'	no			
Dry/Moist	Multiflora rose	<5'	yes			

Comments:

This is a small closed forest unit with rocks in the middle and a lot of wood aster in the herbaceous layer. Other species present include: bitternut hickory, white mulberry, pin oak, Amur honeysuckle, Japanese honeysuckle and Asiatic dayflower. This unit differs from unit # 4 in that black cherry is a dominant species in this unit and #4 lacks black cherry. Unit #4 is on a slope and this unit is level.

Unit: 6
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>
scarcely vegetated						Soil compaction
Level						
Dry						

Comments:

This is a fenced in dog run with compacted soil.

Frank S. Hackett Entitation Unit Descriptions, Surveyed August 2007

Unit: 7
Acreage: 0.34
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	Oak, red	>30'	no			
Deciduous	Sweetgum	>30' & 5-30'	no			
Chamaephytes	Norway maple	<5' & 5-30'	yes			
Slope	Honeysuckle, Amur	<5' & 5-30'	yes			
Dry/Moist	Locust, black	>30'	yes			
	Multiflora rose	<5	yes			

Comments:

This is a closed forest that becomes thick with multiflora rose and poison ivy in the middle. Other species present include: pin oak, black cherry, flowering dogwood, Siberian elm, sycamore maple, Ailanthus, ose, poison ivy, Virginia creeper, Oriental bittersweet, and periwinkle.

Unit: 8
Acreage: 0.16
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	Oak, red	>30'	no			Trash
Deciduous	Norway maple	<5' & 5-30'	yes			
Phanerophytes	Dogwood spp.	<5' & 5-30'	no			
Slope	Honeysuckle, Amur	<5' & 5-30'	yes			
Dry/Moist						

Comments:

This is a small closed forest located between the Henry Hudson Parkway and a foot path. The interior of the unit is lacking in herbaceous layer. Other species present include: sweet cherry, black locust, sycamore maple, Siberian elm, slippery elm, multiflora rose, wineberry, poison ivy, Oriental bittersweet, violet, aster sp., and wood aster.

Frank S. Hackett Entitation Unit Descriptions, Surveyed August 2007

Unit: 9
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>
Vineland	Porcelain berry	<5' & 5-30'	yes			
Deciduous	Ivy, poison	<5' & 5-30'	no			
Lianas	Virginia creeper	<5'	no			
Slope						
Dry/Moist						

Comments:

This unit is a vineland at the edge of a closed forest. Dominance between Virginia creeper and porcelainberry alternates. In some place the vines have taken over trees. Other species present include: Norway maple, American elm, Amur honeysuckle, multiflora rose, wineberry, yam-leaved clematis, Japanese honeysuckle, and pokeweed.

Unit: 10
Acreage: 0.24
Mgmt. Concern: No

<u>Site:</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbance</u>
Desert					Foot traffic	
Level						
Dry						

Comments:

This unit is a paved pathway.

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.