

Natural Area Mapping and Inventory of Spring Creek 1988 Survey



Prepared by the Natural Resources Group
Michael R. Bloomberg, Mayor
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Spring Creek Natural Area Mapping & Inventory

Surveyed July 1988

166 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 Spring Creek was conducted in 1988 as part of NRG's commitment to improving the natural areas of New York City parks.

Spring Creek Park is located in Northern Jamaica Bay and contains the largest amount of undeveloped land and wetlands in the northern Jamaica Bay area. The name Jamaica comes from the area's first inhabitants, the Jameco, or Yamecah Native Americans, whose name is Algonquin for beaver. The Jameco lived on the northern shore of Jamaica Bay and along Beaver Stream and Beaver Pond (filled in in 1906). Jamaica Bay is a shallow tidal wetland of about 20 square miles in area, located between Brooklyn and Queens. It consists of grassy marshes sheltered from the Atlantic Ocean by the Rockaway Peninsula. The bay contains many islands, but only the largest, Broad Channel, is inhabited. The northern half of the island contains the Jamaica Bay Wildlife Refuge, which has two freshwater ponds and is host to a large number of shorebirds.

Originally, the bay was a fishing and hunting ground for the Canarsee and Rockaway Native Americans, who were displaced by Dutch settlers. The area remained largely unsettled until 1880, when the New York, Woodhaven, and Rockaway Railroad built a wooden trestle five miles long across the bay, connecting the Rockaways to the rest of Queens. Industry expanded along the shores of the bay, and their waste, along with sewage disposal, polluted the bay. In 1916, the board of health banned fishing and swimming in the bay, and all the summer resort hotels that had been built along the bay closed down. The ecosystem has been cleaned extensively in recent decades, as people have come to view pollution as a matter of environmental concern rather than merely a health issue. Today, a part of the bay and its surrounding area is protected as part of the Gateway National Recreation Area, created in 1972 under the National Park Service.

The Shore Parkway section of the Belt Parkway runs through Spring Creek Park. Proposed by Robert Moses in 1930 to provide limited-access highway from Manhattan to Long Island, the 36-mile long Belt Parkway was completed in 1941. Moses also planned a series of "ribbon parks" similar to those found on the Long Island Parkways. Therefore, much of the Belt Parkway runs through parkland, particularly on the eastern shore. The Shore Parkway section runs from the western terminus at the Gowanus Expressway in Bay Ridge to the Cross Bay Boulevard in Howard Beach and accommodates approximately 140,000 vehicles each day.

The original land for Spring Creek Park was acquired by condemnation in May 1938 as part of the construction of the Shore Parkway. In 1992, the Department of Real Property assigned another section of

property to Parks, more than doubling the size of the park. The northern and farthest western portion of the park lies in Brooklyn, while the southern portion below 157th Avenue is contained in Queens. In 1994 and 1995, two more parcels in Queens, on Fairfield Avenue, were added to the park. In keeping with the wilderness of the surrounding area, the park has been left mostly undeveloped.

To facilitate the protection, management and restoration of Spring Creek, 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 Spring Creek 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 “entitiation units.” Entitiation 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.



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Spring Creek Natural Areas Entitment

- Entitment Unit Boundaries
- New York City Parkland (Not Surveyed)

This map is limited by the accuracy of its source data and is intended for illustrative use only.

01-31-2006

Spring Creek Entitation Unit Descriptions, Surveyed July 1988

Unit: 1
Acreage 22.74
Mgmt. Concern: No

<u>Site</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbance</u>
Herbaceous Undulating Dry/Moist	Mugwort Ailanthus	<5' & 5-30' <5' & 5-30'	Yes Yes	Landfill Berm	Pipeline Foot traffic	Dumping Auto Compaction

Comments

Milkweed, goldenrod, yellow sweet clover, cottonwood, Catalpa, mulberry, mimosa, and black cherry. Level field (approx 200' x 250') in SE corner with common mullein, milkweed, annual mugwort, bull thistle, Venus' looking glass, tumble mustard, prickly lettuce, downy chess, and peppergrass. Field surrounded by many mulberry trees. Red-winged blackbirds throughout.

Unit: 2
Acreage 35.92
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 Level Dry				Landfill 12' Berm	Incinerator Junkyard T.A. yard	Compaction

Comments

2 killdeer sighted on western section. Patches of mugwort present among otherwise unvegetated incinerator facility, junkyard, and T.A. storage yard.

Spring Creek Entitation Unit Descriptions, Surveyed July 1988

Unit: 3
Acreage 34.17
Mgmt. Concern: No

<u>Site</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbance</u>
Herbaceous	Mugwort	<5' & 5-30'	Yes	Landfill	Vehicle	Auto
Undulating	Ailanthus	<5' & 5-30'	Yes	157 Ave Bridge	Foot traffic	Dumping
Dry/Moist				Berm	Pipeline rd	Bulldozing

Comments

Black cherry, black locust, cottonwood, mulberry, black willow, Russian olive, milkweed, white and yellow sweet clover, Japanese knotweed, privet, common St. Johnswort, daisy fleabane, scattered grasses, Phragmites, mimosa, Catalpa, smooth sumac and spreading dogbane found in sections. Stand of Ailanthus along flatlands. Sighted: Eastern cottontail, pheasants, goldfinch, red-winged blackbirds, and barn swallows.

Unit: 4
Acreage 0.76
Mgmt. Concern: No

<u>Site</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbance</u>
Intertidal	Phragmites	<5' & 5-30'		Drainpipe		Dumping
Depression	Marsh elder	<5' & 5-30'		Landfill		Auto
Wet						

Comments

Overlooking creek - Ailanthus and mugwort. Descending toward inlet - Phragmites along banks, some mugwort, marsh elder, creek inlet starts NW of Drew in a depression with Phragmites dominant.

Spring Creek Entitation Unit Descriptions, Surveyed July 1988

Unit: 5
Acreage 14.83
Mgmt. Concern: No

<u>Site</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbance</u>
Intertidal	Phragmites	<5' & 5-30'		Wd. Pilings		Dumping
Slope	S. alterniflora	<5'		Ret. Wall		Auto
Wet	Marsh elder	<5' & 5-30'				
	S. patens	<5'				

Comments

Below bridge-Phragmites at upper edge, followed by marsh elder, S. alterniflora, and S. patens. Scattered sea lavender. Above bridge-above 156 Ave., east of Drew, bittersweet nightshade, unknown holes under Phragmites. S. alterniflora denser on south side of creek. Sighted: fiddler crabs, clapper rail, great blue heron, snowy egret, black ducks (?) barn swallows, and green heron. 157 Ave bridge is feeding site at low tide for snowy egret, great egret, and green heron. Killdeer sighted regularly on 157 Ave, 50 ft. east of bridge.

Unit: 6
Acreage 2.52
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					Vehicle	Auto
Level					Plant entry	Dumping
Dry						

Comments

Both streets lined with automobile parts, wrecks, furniture building materials, and other trash. Some piles over 12'.

Spring Creek Entitation Unit Descriptions, Surveyed July 1988

Unit: 7
Acreage 9.61
Mgmt. Concern: No

<u>Site</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbance</u>
Herbaceous	Mugwort	<5' & 5-30'	Yes	Landfill	Foot traffic	Dumping
Undulating	Ailanthus	<5' & 5-30'	Yes	Sewer		Auto
Dry/Moist	Smooth sumac	<5' & 5-30'				

Comments

Western end-landfill spit: wild parsnip, leafy spurge, white and yellow clover, daisy fleabane, grasses, curly dock, milkweed, cottonwood, black locust, goldenrod, box elder, and spreading dogbane. Middle: mugwort and Ailanthus. Between 75 and 76 St. mulberry, common mullein, bull thistle, annual mugwort, black cherry, bittersweet nightshade, campion, and milkweed. Sighted: red-winged blackbirds, flicker and pheasant.

Unit: 8
Acreage 25.68
Mgmt. Concern: No

<u>Site</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbance</u>
Intertidal	Phragmites	<5' & 5-30'		Culvert		Dumping
Depression	S. alterniflora	<5'		Bridge		Sew. Plant
Surface water	Marsh elder	<5'				
	S. patens	<5'				

Comments

Northern border scattered Phragmites, Ailanthus, and mugwort. Phragmites dense at southern border. On both borders, Phragmites changes to marsh elder, sea lavender, S. alterniflora, S. patens, and glasswort along shoreline. Scattered stands of S. alterniflora, S. patens, and glasswort among large intertidal flats. Sighted red-eared turtle, pheasant, green heron, killdeer, bufflehead, black-crowned night heron, red-winged blackbirds, laughing gulls, snowy and great egrets, and 8 glossy ibis.

Spring Creek Entitation Unit Descriptions, Surveyed July 1988

Unit: 9
Acreage 4.18
Mgmt. Concern: No

<u>Site</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbance</u>
Woodland	Black cherry	<5' & 5-30'			Foot traffic	Auto
Level	Smooth sumac	<5' & 5-30'			Vehicle	Dumping
Dry/moist						Exhaust

Comments

Along roadside: downy chess, common plantain, English plantain, nimblewill, Japanese brome, poverty grass. Woodland: beach plum, white poplar, willow oak, red maple, black willow, Russian olive, mulberry, and cottonwood. Understory: white wood aster, poison ivy, and mugwort.

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.