

Natural Area Mapping and Inventory of Powell's Cove 1988 Survey



Prepared by the Natural Resources Group
Michael R. Bloomberg, Mayor
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Powell's Cove Natural Area Mapping & Inventory

Surveyed May 1988

32 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 Powell's Cove was conducted in 1988 as part of NRG's commitment to improving the natural areas of New York City parks.

Powell's Cove, an environmental waterfront park completed in 1999, is a bay with sizable wetlands and filled, undeveloped uplands in the College Point section of Queens. Probably named for the Powell family, who owned land in the vicinity as late as 1873, this parkland was envisaged as a waterfront park to protect tidal wetlands and the natural environment of the marshland region.

College Point, originally the Tues Neck territory of the Matinecoc tribe, was first acquired by English settlers in the 1640s. The area remained the preserve of large landowners, and in 1838 Reverend William Augustus Muhlenberg, rector of St. George Episcopal Church in Flushing, founded St. Paul's College in the area. In the 1850s a German immigrant named Conrad Poppenhusen (1818-1883) arrived in College Point and changed the face of the neighborhood with his introduction of a rubber factory.

Poppenhusen's factory attracted hundreds of immigrant workers for whom the industrialist created a self-contained community with schools, a library, water and sewage systems, a railroad, and a cobblestone road to Flushing. As more rubber factories followed, College Point became the rubber capital of the Northeast, until plastics replaced hard rubber in manufacturing. With the demise of rubber factories, College Point turned to other industries, but primarily became a residential neighborhood.

This park, located between 9th Avenue, 130th Street, 11th Avenue and 131st street, was acquired in two main parcels, in 1993 and 1995 respectively. The acquisition of the second parcel was a result of mitigation for the loss of parkland from the construction of the U.S. Tennis Association's stadium in Flushing Meadows Park. Between 1995 and 1999, Council Member Michael Abel allocated over \$5.5 million in funds for the creation of the preserve.

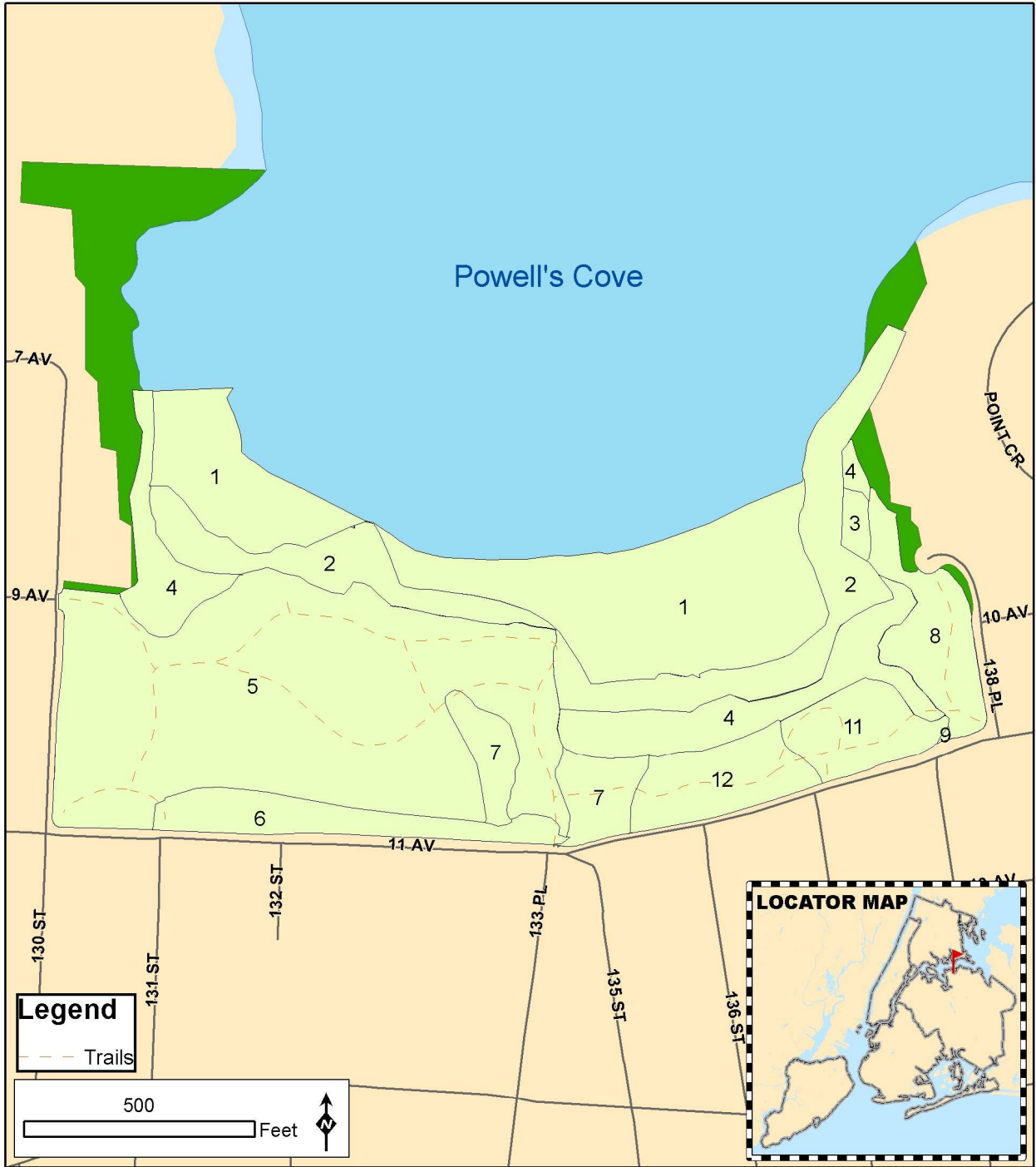
The park is divided into two parts above land, as only 7.094 acres of the park are above ground, while 17.310 acres are submerged marshlands. On the corner of 11th Avenue and 131st Street is an open-space recreation area. The field is bordered by a crushed stone path leading to two rising overlooks that stand over the cove. To the north lie the Bronx and the Whitestone Bridge. A skillfully crafted iron rod fence that depicts the landscape and skyline of the Whitestone Bridge guards the park.

To facilitate the protection, management and restoration of Powell's Cove, NRG completed an inventory of the area using entitation, a process of identifying and describing ecologically distinct plant communities. Using aerial photographs and field reconnaissance, Parks staff delineated distinct ecological entities, known as entitation 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. Entitation of Powell's Cove 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.



<p>City of New York Parks & Recreation Natural Resources Group <i>Arsenal North, 1234 Fifth Avenue, New York, NY 10029</i> Michael R. Bloomberg, Mayor Adrian Benepe, Commissioner Bill Tai, Director Tim Wenskus, Project Manager Craig Mandel, GIS/Data Manager Jennifer Epstein, NRG Staff</p>	<p>Powell's Cove Natural Areas Entitment</p> <ul style="list-style-type: none"> Entitment Unit Boundaries (1988) New York City Parkland (Not Surveyed) <p><small>This map is limited by the accuracy of its source data and is intended for illustrative use only.</small></p>
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01-31-2006

Unit: 1
Acreage: 6.92
Mgmt. Concern: No

<u>Site</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbance</u>
Intertidal Level Surface water				Landfill		Dumping Trash Flotsam

Comments:

Mudflats below salt marsh area. Some clumps of saltwater cordgrass. Many fiddler crabs, mussels, etc.. Dumping, trash, culvert flowing into marsh. Also rockweed and other algae.

Unit: 2
Acreage: 4.40
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 Slope Surface water	S.W. cordgrass Sea lavender Rockweed	<5' <5' <5'		Landfill		Dumping Trash Flotsam

Comments:

Band of saltwater cordgrass around Powell's Cove into the mud flats. Partially submerged at high tide. Inland is mixed with sea lavender; closer to mudflats is rockweed and other algae. Lots of trash, flotsam and pollution.

Unit: 3
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>Disturbance</u>
Scrub	Marsh elder	<5' & 5-30'		Landfill		Trash
Level	Spikegrass	<5'				Dumping
Surface water	S.M. cordgrass	<5'				Flotsam

Comments:

Strips of marsh elder between saltwater cordgrass (unit 2) and the upland areas. Mixed in are above species and seaside goldenrod, blackgrass, and Phragmites. Lots of trash and flotsam.

Unit: 4
Acreage: 2.89
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	Phragmites	<5' & 5-30'		Landfill		Trash
Slope				Pier		Dumping
Surface water						Culvert

Comments:

Borders of Phragmites around the high marsh. Some marsh elder, seaside goldenrod, saltmeadow cordgrass, spearscale and saltwort mixed in. Other occasional plants include box elder, mugwort and curly dock.

Unit: 5
Acreage: 11.18
Mgmt. Concern: No

<u>Site</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbance</u>
Herbaceous Undulating Moist	Mugwort	<5' & 5-30'	Yes	Landfill Culvert Road	Vehicle Foot traffic	Dumping Auto Vandalism

Comments:

Majority of vegetation is consistent with this unit. Mugwort with other herbaceous plants and some clumps of trees on top intense landfill with cars and dumping, open areas where cars burned, wide paths (one paved). Other spp.: Ailanthus, Eastern cottonwood, Norway maple, black locust, mulberry, black cherry, Aster, dogbane, goldenrod, etc.

Unit: 6
Acreage: 0.72
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 Slope Moist	English ryegrass	<5'	Yes	Landfill	Vehicle Foot traffic	Dumping Auto Trash

Comments:

Built up berm, bordering part of 11th Avenue, of soil and buried autos and various dumped items. Mostly unvegetated, some seeded grass in southern part. Great access point for dumpers. Other spp.: pineapple weed, mugwort, crabgrass.

Unit: 7
Acreage: 1.27
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	Ailanthus	<5' & 5-30'	Yes	Landfill	Vehicle	Dumping
Undulating	Black locust	<5' & 5-30'			Foot traffic	Auto
Moist	Box Elder	<5' & 5-30'				
	E. cottonwood	<5' & 5-30'				

Comments:

Small wooded areas of mostly pioneering tree sp., such as Ailanthus, black locust, black cherry, Eastern cottonwood, and mulberry. Some smooth sumac beneath and consistent mugwort cover. Other spp.: goldenrod, rugosa rose, sweet yellow clover, and bedstraw.

Unit: 8
Acreage: 1.59
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	Sweet yellow clover	<5'	Yes	Landfill	Vehicle	Dumping
Undulating	Mugwort	<5'	Yes		Foot traffic	Auto
Moist					Dumping	

Comments:

Herbaceous meadow of sweet yellow clover and mugwort with some spots with trees (black locust, Ailanthus, box elder) and other herbaceous species mixed in on top of landfill with dumping and autos. Other spp: common evening primrose, shepherd's purse, black medic, aster spp., goldenrod spp., seaside goldenrod, downy chess, etc.

Unit: 9
Acreage: 0.06
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	Nut sedge	<5'		Landfill	Vehicle	Dumping
Depression	Common cattail	<5'			Foot traffic	Trash
Surface water						

Comments:

Small fresh/brackish spot with nut sedge and common cattails. Also some Phragmites, polygonum spp., Bideus spp., curly dock, etc.. Spot receives water from channels cut approximately 3 years ago to collect rain water from roads.

Unit: 10
Acreage: 0.20
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	Phragmites	<5' & 5-30'		Landfill	Vehicle	Dumping
Depression					Foot traffic	Trash
Surface water						

Comments:

Fresh/brackish channel of water surrounded by and filled with Phragmites. Other plants include: mugwort, Asters, seaside goldenrod, Bideus spp., blackgrass, and curly dock.

Unit: 11
Acreage: 1.27
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'	Yes	Landfill	Vehicle	Dumping
Undulating	Phragmites	<5' & 5-30'			Foot traffic	Auto
Moist						Compaction

Comments:

Mostly mugwort with Phragmites in patches and scattered. Some trees (Ailanthus, box elder, Eastern cottonwood, black locust, black willow, black cherry). A number of channels cut from 11th Avenue to channel rain water runoff from streets. Other spp.: goldenrod, Aster, dogbane, poor-man's-pepper, bedstraw, downy chess, etc..

Unit: 12
Acreage: 1.63
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	Dumping
Undulating	Dogbane	<5' & 5-30'			Foot traffic	Auto
Moist						Vandalism

Comments:

Herbaceous meadow of mugwort and dogbane with other herbaceous species. One area contains recently (this spring) cut trees. Area beneath former trees containing marsh marigold. Lots of dumping and autos. Other plants include jewelweed, Japanese knotweed, Eastern cottonwood, box elder, black locust, London planetree, Ailanthus, Paulownia, goldenrod, and bedstraw.

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.