

Natural Area Mapping and Inventory of Arbutus Creek 1989 Survey



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

Arbutus Creek Natural Area Mapping & Inventory

Surveyed August 1989

62 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 Arbutus Creek was conducted in 1989 as part of NRG's commitment to improving the natural areas of New York City parks.

The area referred to as Arbutus Creek in this ecological assessment is now the northwestern portion of Blue Heron Park. This park is named after the gray-feathered predatory bird with a yellow bill, the blue heron (*Ardea herodias*). A hand-sculpted blue heron greets visitors at the entrance to the park.

The blue heron can be found throughout much of the New York area. Reaching more than four feet in height, it can typically be spotted standing at the edge of a pond or marsh, watching for fish or frogs. These animals make up their main diet, though they will also eat small mammals, reptiles, and smaller birds on occasion. Most herons migrate south in the fall, and those that remain in the north often fall victim to severe weather.

The City acquired this parkland in several segments between 1974 and 2001. By the time of its official dedication on October 22, 1996, a handful of concerned Staten Islanders had been working to preserve and protect the land for a full 33 years. Over time, their efforts were rewarded with the interest and hard work of many of their fellow residents and many Parks officials.

Blue Heron Park has become an outstanding wildlife sanctuary and educational resource. The years have seen it transformed from a wasteland filled with over 30 abandoned cars to a peaceful refuge of walking trails, meadows, ponds, streams, and woodlands. Visitors walking along any of the three main trails of the park will find an impressive array of wildflowers, including Wild columbine (*Aquilegia Canadensis*), Black-eyed Susan (*Redbeckia hirta*) and Jack-in-the-pulpit (*Arisaema triphyllum*).

The park also holds six ponds, among them the 1.75-acre Spring Pond and the 1.4-acre Blue Heron Pond, crossed by a popular footbridge. These kettle ponds were formed 15,000 years ago by the retreating Wisconsin glacier. Today they are teeming with marine life such as the curve-billed glossy ibis (*Plegadis falcinellus*), the black-crowned night heron (*Nycticorax nycticorax*), wood duck (*Aix sponsa*), owls (*Strigiformes*), osprey (*Pandion haliaetus*), turtles (*Chelonia*), and white water lilies (*Nymphaea odorata*). Spring peepers (*Pseudacris crucifer*) and tree frogs (*Hylidae*) find ample breeding grounds in the ponds, where nature enthusiasts flock to observe the thriving ecosystem.

The Visitors Center lies just inside the Poillon Avenue entrance to the park and contains several classrooms, exhibit areas, a library, an office, and rest rooms. It also has two observation decks with bird feeders and a mist net for bird banding - ideal conditions for bird watching and picnic tables for anyone to use. A wide variety of arts and educational programming is provided by the Urban Park Rangers and the Friends of Blue Heron, a community organization. The offerings include nature walks, classes, crafts, zoo animals, storytelling, and special holiday events.

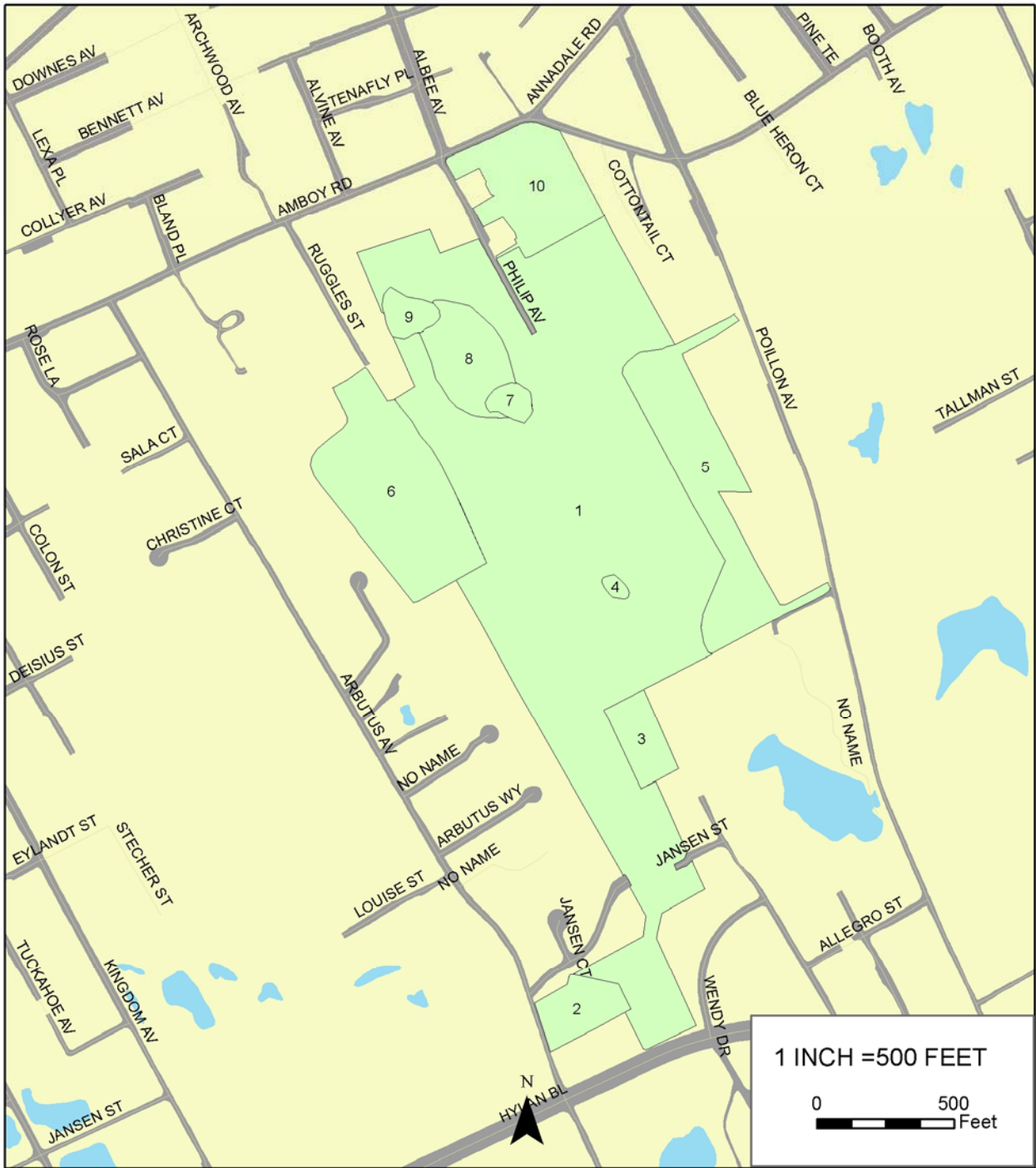
In 1994, Councilman Vito J. Fossella provided \$8,195 for surface investigations on Blue Heron Park, and then in 1996, \$2,828,991, also provided by Fossella, went toward the construction of the Visitors Center, parking facilities, landscape restoration, and general habitat improvements. From 1997-2001, \$703,000 provided by Councilman Jerome X. O'Donovan purchased two additions to the park.

To facilitate the protection, management and restoration of Arbutus 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 Arbutus 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.



ENTITATION UNITS - 1989
 ARBUTUS CREEK
 RICHMOND COUNTY, CITY OF NEW YORK



**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

01/15/2008

www.nyc.gov/parks

2008.01.15.8

Arbutus Creek Area Entitation Unit Description, Surveyed August 18, 1989

Unit: 1
Acreage: 38.39
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	Sweetgum	All				Dumping
Deciduous	Red maple	All				
Phanerophytes						
Level						
Dry/Moist						

Comments:

Primarily sweetgum, red maple, with arrowwood understory. Northern unit contain stream, standing water, and drainage ditch. Other species: Sassafras, pignut hickory, black tupelo, Rubus, mugwort, poison ivy, garlic mustard, Virginia creeper, Japanese knotweed, green ash, catbrier, black cherry, black birch, pin oak, wild lily-of-the-valley, spicebush, cinnamon fern, false Solomon's seal, Indian bittersweet, pokeweed, Japanese barberry, sweet pepperbush, etc.

Unit: 2
Acreage: 1.49
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	Bittersweet	<5'	Yes	Landfill		Dumping
Deciduous	Spicebush	<5'		Exotic planting		
Lianas	Green ash	5'-30'&<5'				
Undulating						
Dry/Moist						

Comments:

Disturbed area behind gas station with a drainage ditch transecting it. Other species: Elderberry, jewelweed, grasses, Rubus, boneset, Japanese knotweed, rose, American beech, saucer magnolia, Virginia creeper, black locust, sweetgum, red maple, black walnut, crab apple, wild parsnip, spreading dogbane, goldenrod, white oak, mugwort, wild grape, Japanese honeysuckle, and arrowwood. Wildlife: black dash butterfly.

Arbutus Creek Area Entitation Unit Description, Surveyed August 18, 1989

Unit: 3
Acreage: 1.30
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	Sweetgum	All		Dirt Road	Foot traffic	Auto
Deciduous	Tulip tree	All				Compaction
Phanerophytes						
Level						
Dry/Moist						

Comments:

Clearing with numerous tulip tree and sweetgum sapling. Other species: pin oak, wild lily-of-the-valley, poison ivy, black cherry, arrowwood, red maple, elderberry, Virginia creeper, Rubus, wild sarsaparilla, goldenrod, boneset, grasses, pearly everlasting. Wildlife: mockingbird, grackle.

Unit: 4
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>
Woodland	White Poplar	5-30'&<5'	Yes			Auto
Deciduous	Black tupelo	5-30'&<5'				
Phanerophytes						
Level						
Dry/Moist						

Comments:

Some standing water. Other species: wild grape, catbrier, poison ivy, pin oak, gray birch, tulip tree.

Arbutus Creek Area Entitation Unit Description, Surveyed August 18, 1989

Unit: 5
Acreage: 4.92
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	Catbrier	<5'				
Deciduous	Poison Ivy	<5'				
Lianas	Bittersweet	<5'	Yes			
Level						
Dry/Moist						

Comments:

Vineland with above species, also: black cherry, red mulberry, red maple, walnut, rose, garlic mustard, partridge berry, pokeweed, and Ailanthus.

Unit: 6
Acreage: 6.41
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	Red Oak	>30'&5-30'			Barb Wire	
Deciduous	White Oak	All				
Phanerophytes						
Level						
Dry/Moist						

Comments:

Contains a drainage area with sweet pepperbush. Other species: catbrier, sweetgum, white birch, spotted wintergreen, jewelweed, cinnamon fern.

Arbutus Creek Area Entitation Unit Description, Surveyed August 18, 1989

Unit: 7
Acreage: 0.39
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 Deciduous Chamaephytes Depression Surface water	Sweet Pepperbush	<5'				

Comments:

Small pound with sweet pepperbush growing in and around it, surrounded by black willow and grasses.

Unit: 8
Acreage: 2.13
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 Deciduous Phanerophytes Undulating Dry/Moist	Sassafras Sweetgum Red maple	5-30'&<5' 5-30" &<5' 5-30'&<5'				Erosion

Comments:

Includes stands of dead sassafras. Other species: sweet pepperbush, cinnamon fern, and pin oak. Herbaceous layer very sparse, mostly leaf litter.

Arbutus Creek Area Entitation Unit Description, Surveyed August 18, 1989

Unit: 9
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	Grasses	<5'			Foot traffic	
Deciduous	Goldenrod	<5'				
Hemicryptophytes Level Dry/Moist	Common ragweed	<5'				

Comments:

Meadow with edge of red maple, black locust, Ailanthus, white oak, and black cherry, Other species: Joe-pye weed Japanese knotweed, strawberry, spreading dogbane, little bluestem, horse weed, arrowwood, pin cherry, red clover, jewelweed, Rubus, Carex, poison ivy. Wildlife: common yellowthroat, Silver-spotted skipper, tiger swallowtail.

Unit: 10
Acreage: 4.05
Mgmt. Concern: No

<u>Site:</u>	<u>Species</u>	<u>Height</u>	<u>Exotic</u>	<u>Historical</u>	<u>Uses</u>	<u>Disturbances</u>
Woodland	Ailanthus	5-30'&<5'	Yes	Exotic planting		Dumping
Deciduous	Black cherry	5'-30'&<5'				
Phanerophytes Undulating Wet	Sassafras	5'-30'&<5'				

Comments:

Disturbed area with mixture of above species plus: crab apple, mugwort, Japanese honeysuckle, Phragmites, sweetgum, mulberry, poison ivy, box elder, arrowwood, jewelweed, pin oak, Virginia creeper, green ash, and wild grape. Wildlife: house wren.

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.