Greening the Industrial Shoreline of Newtown Creek in Greenpoint Site Summaries and Planting Plans

Species Identification Survey Paddle Observations:

Through canoe trips on Newtown Creek leaving from the North Brooklyn Boat Club, 337 observations were logged into iNaturalist, with 29 native and 41 introduced species identified. The most commonly found and identified plant along the Greenpoint shoreline of Newtown Creek is Ailanthus altissima (Tree of Heaven), which is invasive and prevalent in Brooklyn. Other abundant species are: Artemisia vulgaris (common mugwort), Rhus copallinum (shining sumac), Solidago sempervirens (seaside goldenrod), Galium aparine (catchweed bedstraw), Morus alba (white mulberry), Gleditsia triacanthos (honey locust), Parthenocissus quinquefolia (Virginia creeper), and Melilotus albus (white sweetclover), all having 10 or more observations logged on iNaturalist. Of these most abundant shoreline species, 4 are introduced and 5 are native. See the full list of observation frequencies in the "Greening the Industrial Shoreline iNaturalist Observation Data" spreadsheet. All observations made along the Newtown Creek shoreline can be found on the iNaturalist project page, here: https://www.inaturalist.org/projects/newtown-creek

Due to general abundance of plants and lack of space to plant directly along the shoreline of Newtown Creek, three sites in close proximity to the shoreline were initially identified as planting locations: the street end of Greenpoint Avenue on the north side of the bridge, Apollo Street end, and Meeker Avenue end. After further inspection of these sites and considerations of ground contamination and feasibility of planting and maintenance, Apollo Street end was removed as a planting site and planting at the Meeker Avenue end was limited to two above ground planters.

The finalized list of planting sites for the Greening the Industrial Shoreline of Newtown Creek in Greenpoint project is as follows:

- North side of Paidge Avenue between Clay Street and Provost Street
- South side of Paidge Avenue between Clay Street and Provost Street
- Greenpoint Avenue Street end between Kingsland Avenue and Newtown Creek
- Street tree beds on Clay Street, Box Street, and the north end of Manhattan Avenue
- Meeker Avenue street end (Penny Bridge) planters
- Street trees planted
- Manhattan Avenue Street End Park crescent lawn

As seen in the site map provided, these planting sites help create a green corridor linking the Newtown Creek Nature walk with other green spaces along Newtown Creek (Manhattan Avenue Street End Park, Penny Bridge) and the existing habitat along the shoreline. The 3,039 native perennials, 58 native shrubs, and 17 trees planted in the project area through Greening the Industrial Shoreline of Newtown Creek in Greenpoint will provide habitat for wildlife, improve air quality, reduce the urban heat island effect, and increase biodiversity in Greenpoint. The sites on Paidge Avenue, Manhattan Avenue Street

End Park, and in street tree beds were planted with the help of students and volunteers, which encourages community engagement in greening the neighborhood and imparts a sense of ownership and stake in the success of the plantings.

Site Planting Plans:

North side of Paidge Avenue between Clay Street and Provost Street

The north side of Paidge Avenue between Clay Street and Provost Street has a 5 foot wide lawn strip bordering a low brick building. The site receives full sunlight and has no trees to provide shade for additional plantings. The site is located 0.1 miles from the entrance to the Newtown Creek Nature Walk making it an ideal location for a green corridor that would connect the nature walk further into central Greenpoint. The green corridor would provide pollinators with stopover habitat and food when they travel from the Nature Walk to other green pockets in Greenpoint such as Manhattan Avenue Street End and Transmitter Park. Full sun and drought tolerant species were selected for the North side of Paidge Avenue. Six Juniper trees were planted on this site, as they grow they will be able to provide shade to this stretch of Paidge as well as food and habitat for over 50 species of birds (Slattery, Reshetiloff, and Zwicker, 2003). See below for the full list of trees, shrubs, and perennials planted at this site.

Tree total: 6

Shrub total: 29

Perennial total: 855

Scientific Name	Wildlife Value	Quantity
Juniperus virginiana	songbirds, small mammals, berries consumed by over 50 species of birds	6

Scientific Name	Wildlife Value	Quantity
Aronia melanocarpa	songbirds, small mammals	7
Clethra alnifolia	songbirds, beneficial insects, butterflies, small mammals, waterfowl	22

Scientific Name	Wildlife Value	Quantity
Allium cernuum	Butterflies	50
Euthamia caroliniana	Butterflies, pollinators	100
Monarda punctata	Butterflies, native bees	100
Schizachyrium scoparium	Wildlife cover	200
Asclepias tuberosa	Butterflies, beneficial insects	165
Rudbeckia fulgida	Butterflies, beneficial insects, songbirds	55
Aquilegia canadensis	Butterflies, beneficial insects	10
Baptisia tinctoria	Butterflies, pollinators	25
Echinacea purpurea	Birds, butterflies	150

South side of Paidge Avenue between Clay Street and Provost Street

This site is directly across the street from the previous site and is therefore also very close to the Newtown Creek Nature Walk. Shrubs and perennials were planted in the lawn strip that runs along a raised parking lot and is shaded by two mature trees. Trees were not included due to the amount of shade, and shade tolerant plants such as Geranium maculatum (wild geranium) and Clethra alnifolia (sweet pepperbush) were prioritized for this site. These species were also selected for their high wildlife value to increase biodiversity and provide habitat for birds, insects, and mammals.

Shrub total: 25

Perennial total: 741

Scientific Name	Wildlife Value	Quantity
Aronia melanocarpa	songbirds, small mammals	8
Cornus amomum	high wildlife value for songbirds, waterfowl, small mammals	5
Morella pensylvanica	high wildlife value for birds	8
Clethra alnifolia	songbirds, beneficial insects, butterflies, small mammals, waterfowl	4

Scientific Name	Wildlife Value	Quantity
Allium cernuum	Butterflies	100
Baptisia tinctoria	Butterflies, pollinators	100
Euthamia caroliniana	Butterflies, pollinators	100
Geranium maculatum	Butterflies, beneficial insects, songbirds	128
Monarda punctata	Butterflies, native bees	50
Pycnanthemum tenuifolium	Birds, butterflies, bees	50
Schizachyrium scoparium	Wildlife cover	150
Solidago juncea	Butterflies, songbirds, small mammals	13
Echinacea purpurea	Birds, butterflies	50

Greenpoint Avenue Street end between Kingsland Avenue and Newtown Creek

Two spots on Greenpoint Avenue street end, located between Kingsland Avenue and Newtown Creek to the north of the Greenpoint Avenue Bridge, were selected for planting as part of the Greening the Industrial Shoreline of Newtown Creek in Greenpoint project. The lawn strip along the sidewalk had already been planted with some native perennials by Newtown Creek Alliance in 2018 so it was filled out with two Ilex opaca (American holly) trees and 300 perennial plugs. The corner formed by the wall of the property bordered by Greenpoint Avenue street end and large concrete blocks was an ideal spot for shrubs and a third Ilex opaca. There were previously no trees planted at this site, the addition of three trees will help ameliorate the urban heat island effect and improve air quality for the site that receives strong sun and is located in close proximity to the Greenpoint Avenue bridge which is traversed by over 31,000 vehicles daily (2016 New York City Bridge Traffic Volumes, NYC DOT).

Tree total: 3

Shrub total: 4

Perennial total: 300

Scientific Name	Wildlife Value	Quantity
Ilex opaca	Songbirds, birds eat berries	3

Scientific Name	Wildlife Value	Quantity
Clethra alnifolia	songbirds, beneficial insects, butterflies, small mammals, waterfowl	4
Scientific Name	Wildlife Value	Quantity
Euthamia caroliniana	Butterflies, pollinators	100
Monarda punctata	Butterflies, native bees	50
Pycnanthemum tenuifolium	Birds, butterflies, bees	50
Schizachyrium scoparium	Wildlife cover	50
Symphyotrichum laeve	Butterflies	50

Street Tree Beds

269 native perennials were planted in 25 tree beds with the help of volunteers in the following locations:

- South Side of Box Street between Manhattan Avenue and Commercial Street
- North Side of Clay Street between Manhattan Avenue and Commercial Street
- West Side of Manhattan Avenue between Box Street and Clay Street
- East Side of Manhattan Avenue between Ash Street and Dupont Street

Increased stewardship of these tree beds such as watering from residential buildings and businesses because of the perennials planted in the tree bed will benefit the trees, allowing them to grow larger and provide greater air quality improvements and air cooling capacity.

Perennials

Scientific Name	Wildlife Value	Quantity
Allium cernuum	Butterflies	100
Geranium maculatum	Butterflies, beneficial insects, songbirds	64
Echinacea purpurea	Birds, butterflies	60
Rudbeckia fulgida	Butterflies, beneficial insects, songbirds	45

Perennial total: 269

Meeker Avenue street end (Penny Bridge) planters

Two Amelanchier canadensis (Serviceberry) that were donated to National Wildlife Federation Eco School PS 110 by Greening Greenpoint were planted in above ground containers in Penny Bridge at Meeker Avenue street end. Amelanchier canadensis provide food for birds, mammals, and insects as well as insect habitat.

Trees

Tree total: 2

Scientific Name	Wildlife Value	Quantity
Amelanchier canadensis	Songbirds, small mammals, used by 58 wildlife species, 35 bird species, important early summer food	2

Street Trees Planted

Six street trees were planted in the Greening the Industrial Shoreline of Newtown Creek in Greenpoint project area. Trees trap particulate pollutants on their leaves and bark, removing them from the air before they can enter people's lungs. One tree can remove 26 pounds of carbon dioxide from the atmosphere annually, the equivalent of 11,000 mules of car emissions (New York City, 2007). The street trees planted as a part of this project will remove 156 pounds of carbon dioxide from the air per year, improving air quality in Greenpoint's industrial region. The street trees planted will also provide much needed shade, reducing the urban heat island effect.

Trees total: 6

Scientific Name	Wildlife Value	Quantity
Prunus virginiana	Butterflies; food for birds, mammals, and insects; habitat for birds and insects	2
Syringa reticulata	Hummingbirds, butterflies	2
Zelkova serrata		2

Manhattan Avenue Street End Park Crescent Lawn

Perennials for Manhattan Avenue Street End Park (other than Asclepias tuberosa and Panicum virgatum 'Shenandoah') were purchased using a separate GCEF grant but the area was prepped (weeded, tilled, top-soil applied) by contractors hired using Greening the Industrial Shoreline of Newtown Creek's funds and New York Tree Trust staff stored and transported all perennials planted in the park. The native perennials selected increase biodiversity in the formerly sparse pocket park and provide food and habitat for wildlife.

Scientific Name	Wildlife Value	Quantity
Allium cernuum	Butterflies	40
Anemone canadensis	Pollinators	20
Aquilegia canadensis	Butterflies, beneficial insects	25

Echinacea pallida	Hummingbirds, butterflies	30
Monarda punctata	Butterflies, native bees	20
Panicum virgatum ‘Shenandoah’	Songbirds, waterfowl, small mammals; Food for sparrow species	50
Asclepias tuberosa	Butterflies, beneficial insects	25
Amsonia hubrichtii	Butterflies	8
Amsonia taebermontana	Butterflies	8
Baptisa Australis	Butterflies, beneficial insects	4
Geum triflorum	Pollinators, butterflies	50
Liatris scariosa var. novae-angliae	Butterflies	4
Penstemon digitalis	Hummingbirds	12
Rudbeckia hirta	Butterflies, songbirds, beneficial insects	25
Sisyrinchium angustifolium 'Lucerne'	Pollinators, songbirds	33
Solidago hybrida 'Little Lemon'	Butterflies	20
Sporobolus heterolopis	Birds	500
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