



# The State Of The Trees

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**Madison Square Park**  
**2023**

# Contents

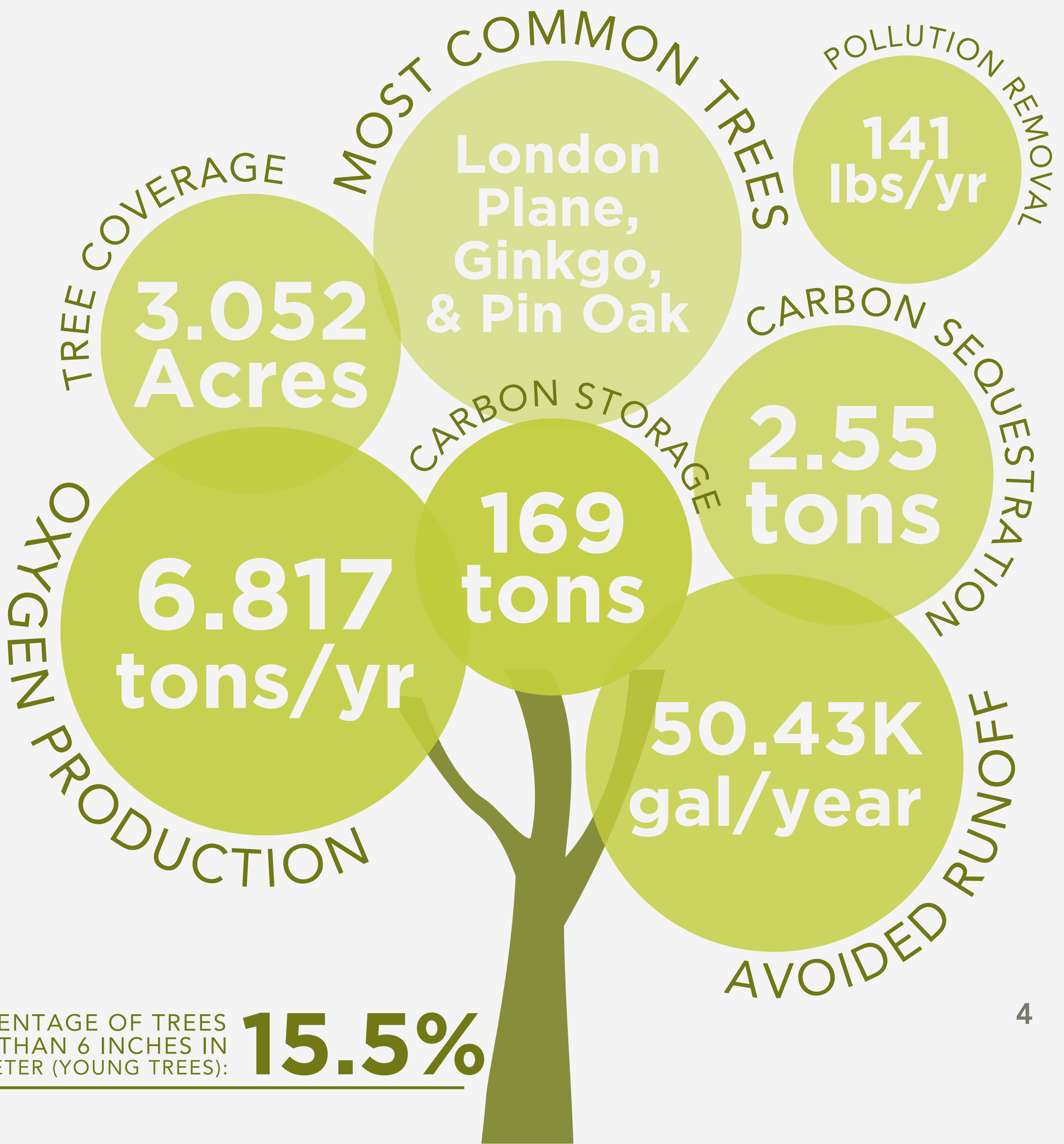
I-Tree Report	4
Sustainability Benefits	6
Threats	8
Changes to the trees in 2023	10



# I-TREE REPORT

In August of 2023, Madison Square Park Conservancy began to move its tree database into the i-Tree urban forestry software, revealing some interesting data about the sustainability benefits of our small urban forest.

164 trees were analyzed for their contributions to environmental quality using models developed by the US Forest Service Northern Research Station.





**LONDON PLANE**

***PLATANUS* × *ACERIFOLIA***

FAMILY: PLATANACEAE  
ORIGIN: EUROPE



107

# SUSTAINABILITY BENEFITS

Trees in Madison Square Park are great at removing pollution, most notably particulate matter less than 2.5 microns, ozone, and nitrogen dioxide. Trees reduce the amount of carbon in the atmosphere by sequestering carbon in new growth each year. The amount of carbon annually sequestered increases with the size and health of the trees. This is one of the many reasons why Madison Square Park Conservancy is a member of the Forest for All Coalition, a group of parks, green industry professionals, and citizens in support of a healthy and stable 30% New York City forest canopy cover. Trees in Madison Square Park are estimated to store 170 tons of carbon with a gross annual sequestration of 2.55 tons in 2023. London plane trees (*Platanus × acerifolia*) are currently the greatest at storing carbon in the park due to their age and good health. London plane trees make up 38.8% of all carbon stored and 36.4% of carbon sequestered.

Surface runoff has been a climate challenge in many urban areas and has become an increasing issue of concern in New York City since Hurricane Sandy. This past fall, Brooklyn had significant flooding due to stormwater runoff. Trees can help mitigate these precipitation events by reducing the amount of surface runoff. It's estimated that Madison Square Park's trees reduced runoff by an estimated 50.4 thousand gallons this year.

37% of the trees inventoried were native to North America with 28% of the total being local to New York State. By conducting this inventory, we were able to review what species could be added to our arboretum to increase the benefit to wildlife.



# THREATS

Climate change and global trade have brought a myriad of pests and diseases to our trees. By continuing to diversify our tree canopy, we can help mitigate the risk of losing significant canopy cover due to pests and disease. The species most at risk to pests and disease include Elms, Oaks, Apples, and Lindens.

*Those of most concern include:*

- **Asian Longhorned Beetle:** poses a threat to 42.7% of Madison Square Park's Urban Forest. This threat is currently being monitored and inspected throughout New York State.
- **Dutch Elm Disease:** has been a long-term issue with Elm trees since the 1930s. Madison Square Park's historic Elms require inoculations against this pathogen every two years.
- **Spongy Moth** (previously known as gypsy moth): is a defoliator that feeds on leaves in major outbreaks. In Madison Square Park, these are removed by staff members when seen. This pest threatens 25% of the overstory.
- **Oak Wilt:** is caused by a fungus and threatens 15% of the tree canopy.





# CHANGES TO THE TREES IN 2023:

## Trees removed: 2

- Tree of Heaven (*Ailanthus altissima*) due to structural defects and invasive nature
- Black Locust (*Robinia pseudoacacia*) due to structural defects

## Trees planted: 6

- Sassafras tree (*Sassafras albidum*)
- Northern Catalpa (*Catalpa speciosa*)
- Fire King Muscledwood (*Carpinus caroliniana* 'Fire King')
- Kindred Spirit Hybrid Oak (*Quercus* 'Nadler')
- Prairie Sentinel Hackberry (*Celtis occidentalis* 'Prairie Sentinel')
- Espresso Kentucky Coffeetree (*Gymnocladus dioicus* 'Espresso')





# MADISON SQUARE PARK IS AN ARBORETUM

#	COMMON NAME	BOTANICAL NAME
6A	Japanese katsura	<i>Cercidiphyllum japonicum</i>
23B	Japanese snowbell	<i>Styrax japonicus</i>
23D	Cornelian cherry	<i>Cornus mas</i>
26A	Persian ironwood	<i>Parrotia persica</i>
29A	Redbud	<i>Cercis canadensis</i> 'Floating Clouds'
33	Kwanzan cherry	<i>Prunus serrulata</i> 'Kwanzan'
37	Swamp white oak	<i>Quercus bicolor</i>
40	Wych elm	<i>Ulmus glabra</i>
44	Pagoda tree	<i>Styphnolobium japonicum</i>
52	English elm	<i>Ulmus procera</i>
63C	Carolina silverbell	<i>Halesia carolina</i> 'UConn Wedding Bells'
64	Pin oak	<i>Quercus palustris</i>
68A	Red buckeye	<i>Aesculus pavia</i>
81	English elm	<i>Ulmus procera</i>
82	Horse chestnut	<i>Aesculus hippocastanum</i>
86	Ginkgo	<i>Ginkgo biloba</i>
94A	Yellowwood	<i>Cladrastis kentukea</i>
95	Chinese elm	<i>Ulmus parvifolia</i>
107	London plane	<i>Platanus × acerifolia</i>
128	Red oak	<i>Quercus rubra</i>
141	Hackberry	<i>Celtis occidentalis</i>
158	Littleleaf linden	<i>Tilia cordata</i>
167A	Dove tree	<i>Davidia involucreta</i> 'Sonoma'
167B	Japanese apricot	<i>Prunus mume</i> 'Peggy Clarke'
172	Downy hawthorn	<i>Crataegus mollis</i>
176	Washington hawthorn	<i>Crataegus phaenopyrum</i>
196A	Kousa dogwood	<i>Cornus kousa</i>
208	Weeping tupelo	<i>Nyssa sylvatica</i> 'Autumn Cascade'
209	Sweet gum	<i>Liquidambar styraciflua</i> 'Slender Silhouette'
210A	Redbud	<i>Cercis canadensis</i> 'JN16'
211	Chinese fringe tree	<i>Chionanthus retusus</i> 'Tokyo Tower'
212	Musclewood	<i>Carpinus caroliniana</i> 'J.N. Globe'
214	Southern magnolia	<i>Magnolia grandiflora</i>
216	Chinese ironwood	<i>Parrotia subaequalis</i>
217	Serviceberry	<i>Amelanchier × grandiflora</i> 'Autumn Brilliance'
218	Chinese fringe tree	<i>Chionanthus retusus</i> 'China Snow'
219	Fringe tree	<i>Chionanthus virginicus</i>
221	American basswood	<i>Tilia americana</i> 'McKSentry'
222	Red maple	<i>Acer rubrum</i> 'PNI 0268'
224	Redbud	<i>Cercis canadensis</i> 'NC2016-2'
225	Crabapple	<i>Malus</i> 'Donald Wyman'
228	Black locust	<i>Robinia pseudoacacia</i> 'Purple Robe'
229	Musclewood	<i>Carpinus caroliniana</i>
230	Silver linden	<i>Tilia tomentosa</i> 'PNI 6051'

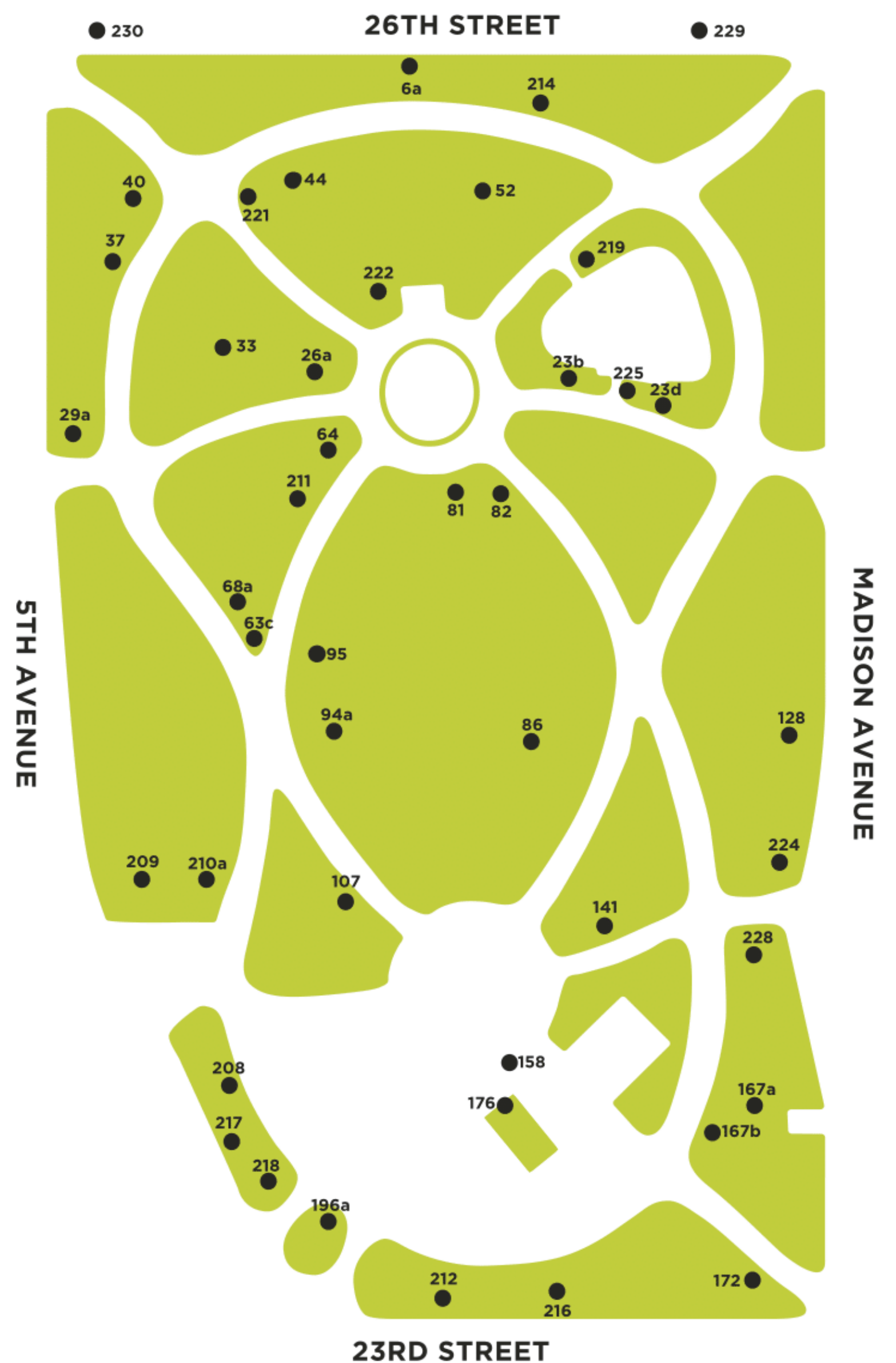




Photo: Andy Romer Photography



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