

纽约市行道树树种地图 NEW YORK CITY STREET TREES BY SPECIES

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1. 纽约市行道树树种地图全图
1. Full map of New York City Street Tree by Species

作为一个自然主义者，我总是渴望了解身边的植物。在纽约市，植物在体量庞大的建成环境中生存着，想去了解它们并不容易。那些绿色时常被钢筋混凝土所遮蔽而难觅踪影，但是实际上这座城市拥有超过500万棵树木，其中约9%是行道树——其余的树木则位于公园或私人区域（如私人住宅内）。

我绘制树木地图的初衷是让纽约市民更好地了解身边的城市森林。之所以选择行道树，是因为其数据可以从城市的开放数据网站上获取。该地图所展示的树木信息来源于2005年所进行的最近一轮树种调查。下一轮的调查将在今年展开，最新的数据公布后，我届时也将及时更新这份地图。

在项目筹备阶段，我也曾考虑过将公园中的树木也收录到地图之中，但由于大部分公园要么未采集过树木数据，要么数据无法获取，而不得不最终放弃。举例来说：展望公园没有做过树木调查；中央公园曾做过一次树木调查，但其数字媒体中心的副主任博·贝尔告诉我：“非常抱歉，由于运营和法律上的原因，我们目前还无法共享这个数据库。”而那些能够获得数据的几个公园——如格林堡公园和克罗托纳公园，其树木调查的年份又各不相同。

我首先从我所在的布鲁克林区开始着手绘制，但很快将范围扩大到纽约市全部5个行

政区。虽然我的绘制范围扩大了，但我的初衷不曾改变。尽管此前我就了解全市树种比例的一些信息，但是我知道这些信息中的更多细节：不同的社区，乃至整个纽约市分别有着怎样的不同格局？树种的多样性是如何变化的？随着树绘制工作的推进，一幅树木图谱逐渐在地图上显现出来。

那些有着成行成列种植树木的街道，在地图上显现为成行成列的彩色条带。若是一个区域种植了多样化的树种，地图上就会呈现出斑斓的色彩。我们可以从地图上看到：上布朗克斯区的菲尔德斯通大道上生长着一排鹅掌楸（*Liriodendron tulipifera*），曼哈顿上西城美国红栎（*Quercus rubra*）成群生长着，皇后区的毕彻哈斯特地区则生长着一小片紫叶李（*Prunus cerasifera*）。

在绘制树木地图之前，我并不知道不同的行政区会有明显的种植偏好：虽然英国梧桐（*Platanus acerifolia*）在纽约市十分常见，但在布鲁克林区其数量优势最为明显；在皇后区，挪威槭（*Acer platanoides*）的数量则超过其他树种的总和；曼哈顿区最多的树是美国皂角（*Gleditsia triacanthos*），而斯塔顿岛的主要树种是豆梨（*Pyrus calleryana*）；与其他行政区相比，布朗克斯区的树种分布均匀得如棋盘一般——美国皂角、挪威槭和英国梧桐都是这一区常见的

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摘要

纽约市的城市森林带来了诸多环境与社会效益，约25%的树冠覆盖面积来自行道树。这份纽约市行道树树种地图根据最近一轮的树种调查数据绘制而成，展示了这座城市行道树的分布与多样性。这幅地图不只是人们了解周边树木的工具，同时也是纽约市树木栽植的历史记录，亦可为未来城市规划所用。

关键词

纽约；城市森林；行道树；树种；数据；地图

ABSTRACT

New York City's urban forest provides numerous environmental and social benefits. Street trees compose roughly one quarter of its canopy. This map shows the distribution and biodiversity of the city's street trees based on the most recent tree census. The map is more than a way for identifying the placement of trees: it provides a record of planting history and an important tool for planning.

KEY WORDS

New York City; Urban Forest; Street Tree; Specie; Data; Map

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2. 用户可以通过页面上的提示工具和缩放功能来查看地图上的每一棵树。
2. User can explore the map by using the tooltips and zoom function to identify particular trees.

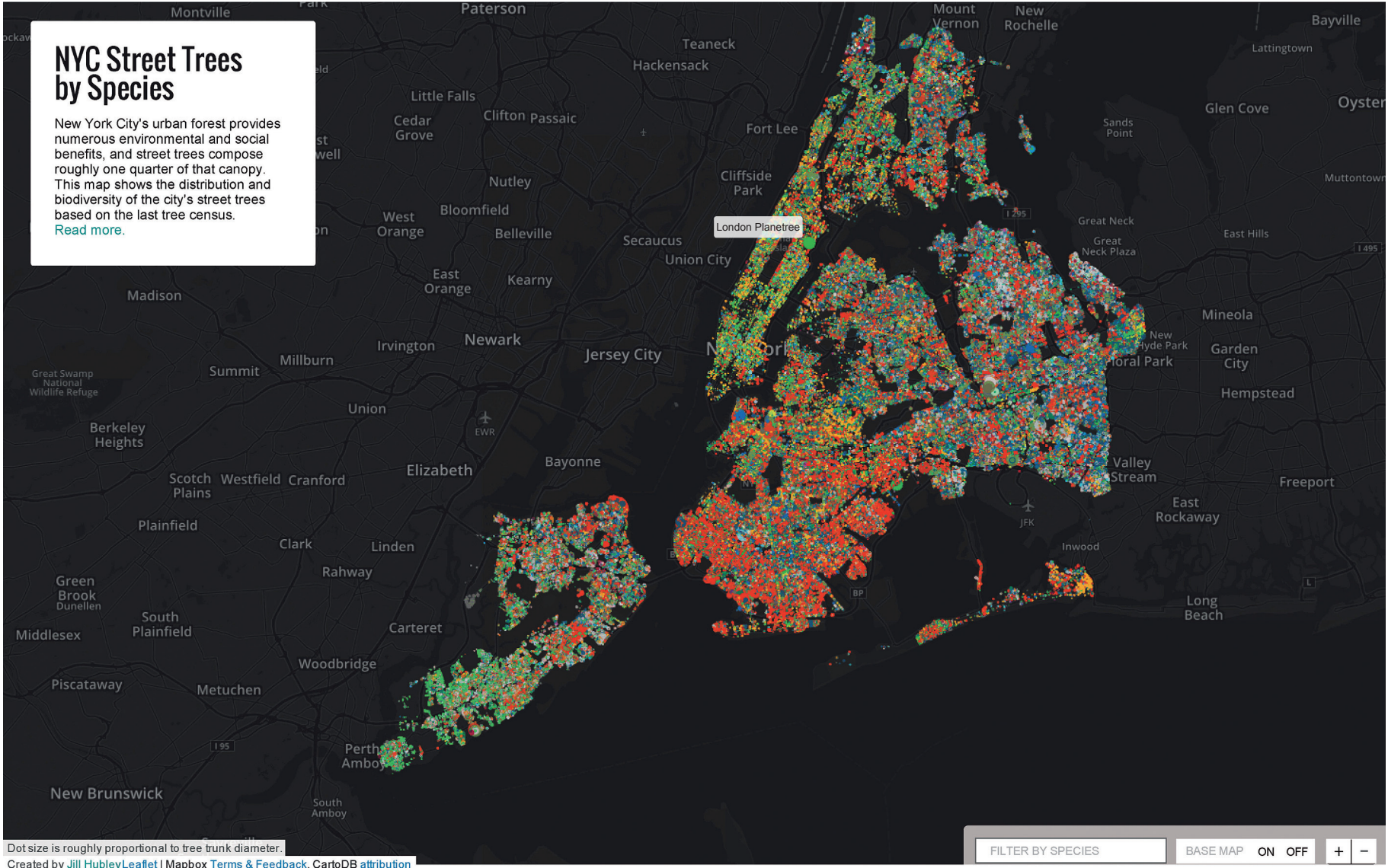
树种。

纽约市的树木种类之多也令我十分惊讶——树种种类总数高达163种。纽约市公园与游憩部制定了一套选择的导则，其制定的标准除了考虑到种植的条件外，生物多样性也是一个重要的考量因子。病虫害往往会发生在某一特定树种上，因此多样化的种植也将成为必然。这幅地图清晰地显示了每个行政区的常见树种，同时也显示了其树种的多样性。有些目前已知的具有侵略性的树种，比如臭椿 (*Ailanthus altissima*) 和挪威槭，现在在城市的各个角落仍能看到它们的身影。然而，这些树种已从纽约市公园批

准的树种名单里被剔除。

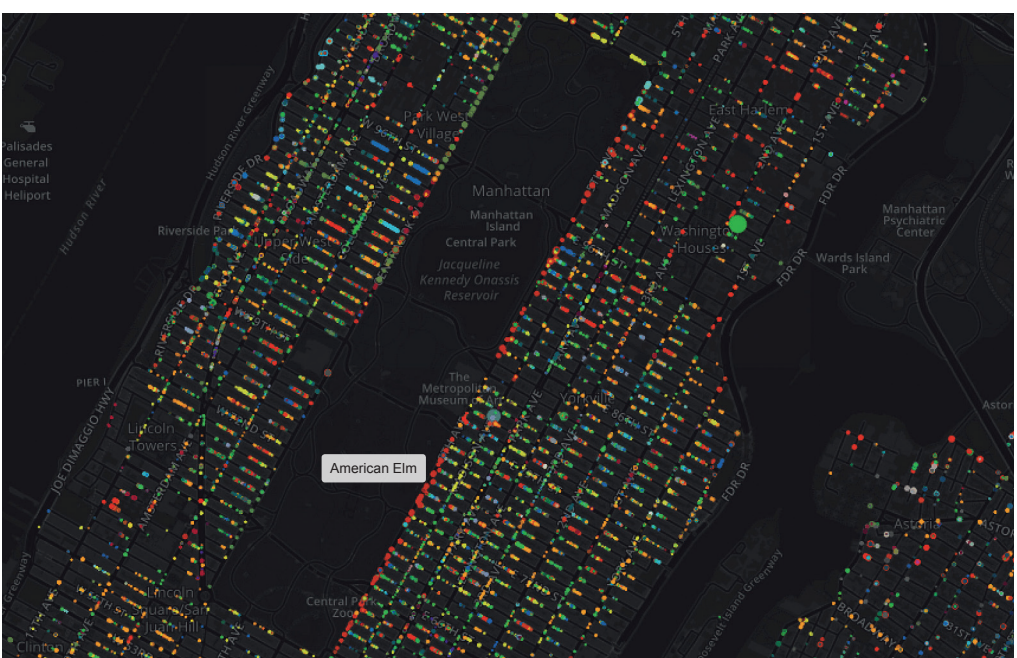
公众可以通过两种方式来使用这份地图：可以通过页面上的提示工具和缩放功能来查看地图上的每一棵树，或者通过筛选选项来查看每一种树的分布情况。此外，我还提供了隐藏底图的选项，这样使用者便可以获得一个更加清晰、纯粹的画面。通过绘制纽约市的行道树树种地图，我得以对整个城市行道树的密度与多样性形成全局式的了解。这幅树木地图不只是人们了解周边树木的工具，同时也是纽约市树木栽植的历史记录，亦可成为一种工具，以为未来城市规划的工具。**LAF**

3. 用户可以通过筛选选项来查看每一种树的分布情况，并可以选择隐藏底图以更清晰地了解该树种的分布。
4. 那些成行成列种植树木的街道，在地图上显现为成行成列的彩色条带。在这个画面中，你还可以发现中央公园的东侧有一条种植着美国榆 (*Ulmus americana*) 的林荫大道。
3. Users can explore the map by using the filter option to see the distribution of each species. The base map can be disabled, allowing users to have a clearer view of the distribution of certain tree species.
4. The map shows streaks of color down roads where there are alleys of trees. One also can find an alley of American Elms (*Ulmus americana*) lines the East side of Central Park in this diagram.



As a naturalist, I always desire to know the identity of the plants around me. In New York City, this takes a particular shape, as the flora competes with the hulking built environment. The greenery, at times, seems overshadowed by the concrete, yet the city is home to over five million trees. Of these, roughly nine percent are street trees. The rest of the city's tree canopy is composed of park trees and private trees (belonging to residences, for instance).

When I set out to make a map of New York's trees, my initial objective was to help residents familiarize themselves with their urban forest. I chose street trees for the map, as information was available from the NYC OpenData portal. The map represents



trees surveyed during the most recent tree census, in 2005. The next tree census is happening this year and I will update the map when the new data is released.

During the build out I considered including park trees, but much of that data is inaccessible or uncollected. For instance, Prospect Park has not done a survey of trees, and while Central Park has completed one, I was told by Bo Bell, their Associate Director of Digital Multimedia, that "Unfortunately, for operational and legal reasons, we can't currently share this database." There is data for a few other parks, such as Fort Greene Park and Crotona Park, but it is often gathered during a different year from the tree census.

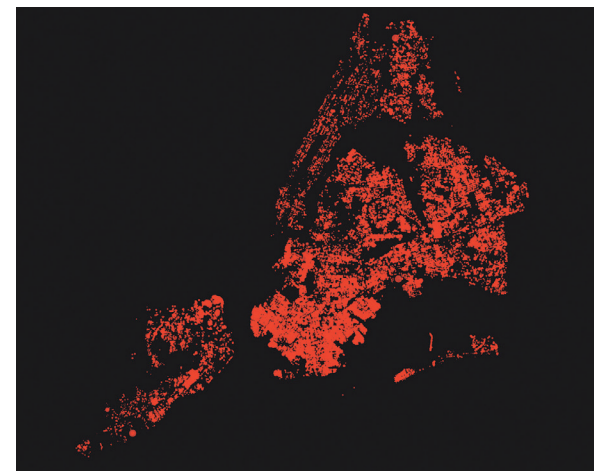
I began by mapping the data for my own borough, Brooklyn, but soon expanded

the map to include the street trees of all five boroughs within the city. Though my geographic focus expanded, my intent remained. While I had seen some numbers on the percentage breakdown of species throughout the city, I was interested in looking at the composition in detail. I wanted to see what patterns took shape in various neighborhoods, and across the city, and to see how the density of trees shifted. As the map progressed, an array of patterns emerged.

The map shows streaks of color down roads where there are alleys of trees. Quilts of hues emerge in areas where many species are planted. A string of tulip trees (*Liriodendron tulipifera*) along Fieldston Avenue in the upper Bronx, clusters of northern red oaks (*Quercus rubra*) on the

- 5-1. 英国梧桐的分布情况
- 5-2. 红花槭 (*Acer rubrum*) 的分布情况
- 5-3. 挪威槭的分布情况
- 5-4. 美国皂角的分布情况
- 5-5. 豆梨的分布情况
- 5-6. 奥椿的分布情况
- 6. 这份地图清晰地反映了皇后区的树种多样性。

- 5-1. London Plane distribution
- 5-2. Red Maples (*Acer rubrum*) distribution
- 5-3. Norway Maples distribution
- 5-4. Honeylocust distribution
- 5-5. Callery Pear distribution
- 5-6. Tree of Heaven distribution
- 6. The map revealing clusters of diverse species of Queens.



5-1



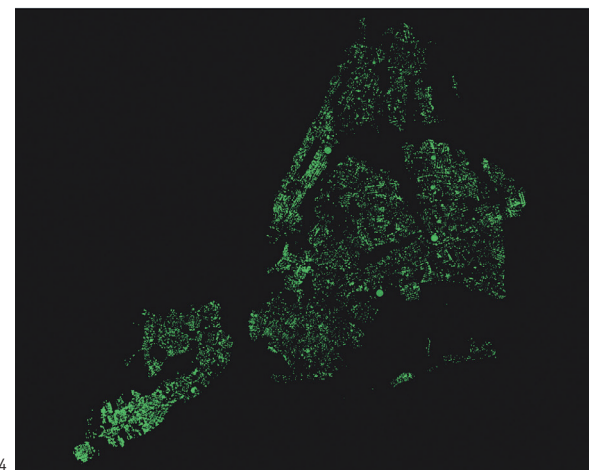
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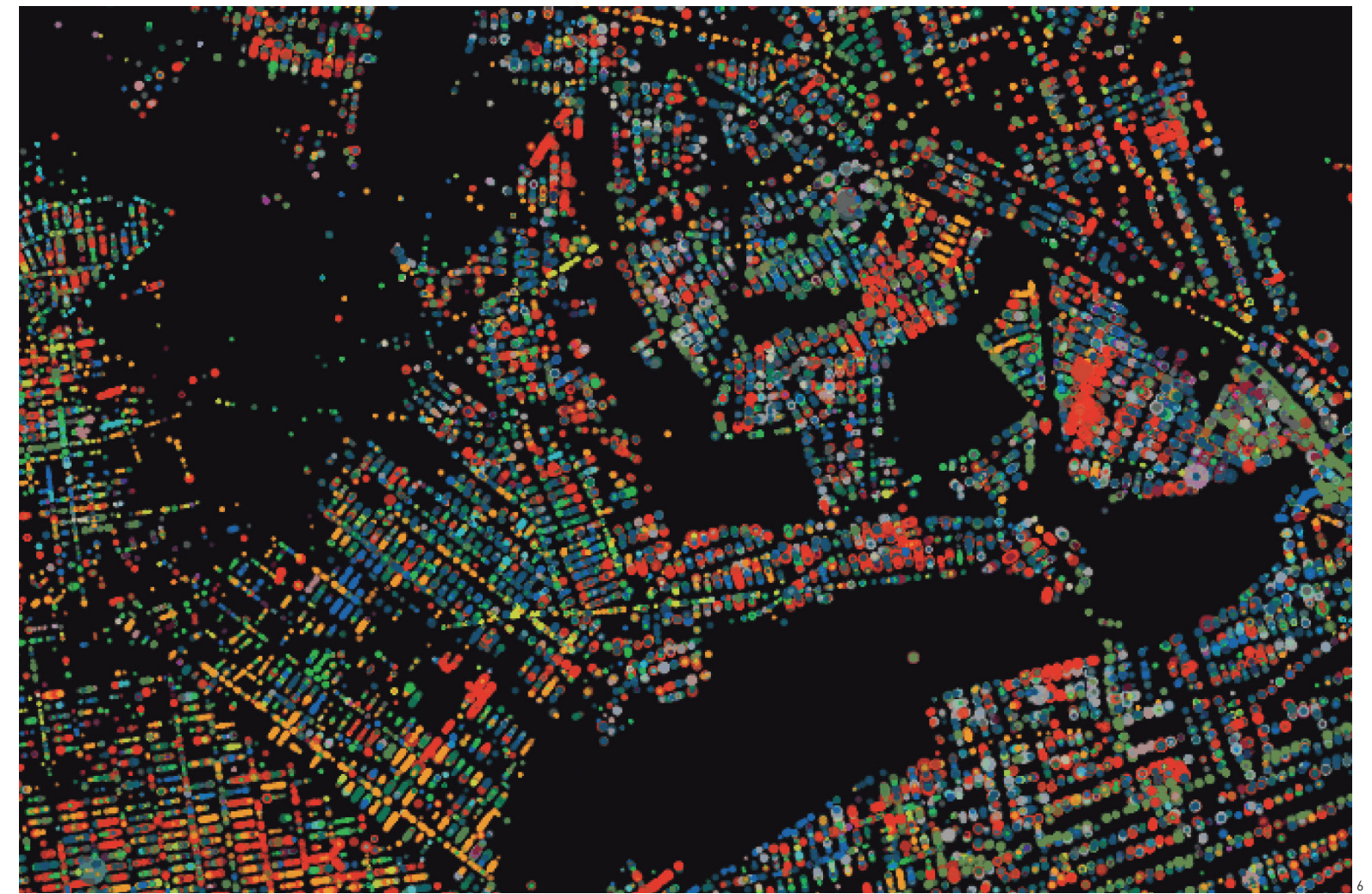
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5-5



5-6



6

Upper West Side of Manhattan, a pocket of purpleleaf plums (*Prunus cerasifera*) in Beechurst, Queens.

Before mapping the trees, I did not know that each borough would skew heavily toward a particular species. The London planetree (*Platanus acerifolia*) dominates the landscape, but is most notable in Brooklyn. In Queens, Norway maples (*Acer platanoides*) outnumber other trees. Manhattan's most populous tree is honeylocust (*Gleditsia triacanthos*), and in Staten Island it is Callery pear (*Pyrus calleryana*). The Bronx is more of a checkerboard than the other boroughs — honeylocust, Norway maple, and London

planetree are all common.

I was also surprised at the number of different species planted — a total of 163. The Department of Parks and Recreation has a methodology for tree selection. In addition to ensuring the selected species is a good fit for its environment, biological diversity is also given high consideration. Diseases and pests that target particular types of trees make varied plantings a necessity. The map makes clear the most prevalent trees in each borough, while revealing clusters of diverse species. Trees that are now known to be invasive, such as Tree of Heaven (*Ailanthus altissima*) and Norway maple, can be seen throughout the city. However, these trees no

longer appear on the NYC Parks approved species list.

To this end, one can explore the map in two ways: by using the tooltips and zoom function to identify particular trees, or by using the filter option to see the distribution of each species. I have also provided the option of disabling the base map for a starker, more abstract view. By mapping the street trees of New York City by species, I was able to create a bird's eye view of the density and diversity of the city's street tree canopy. More than just a tool for identifying the trees nearby, it can serve as a record of planting history, or as a tool for planning in the future. **LAF**