

NEW YORK TREE CENSUS 2015 ANALYSIS USING TABLEAU DASHBOARD

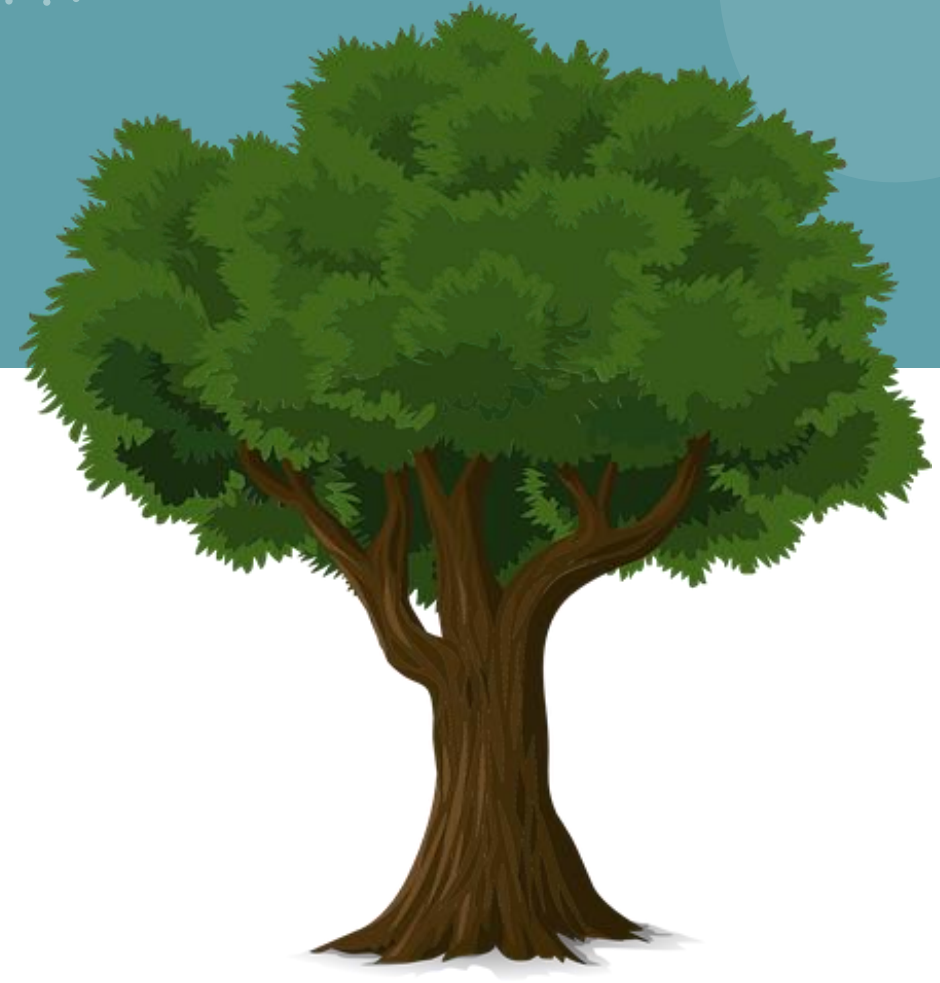


ALY6070 21601: Communications and Visualization for Data
Analytics

Presented By: **Group 6**

Date: 03-30-2022

Faculty: Prof. Mykhaylo Trubskyy



NYC Tree Census 2015 - Overview

The New York Street tree data collected in 2015 by NYC Parks & Recreation personnel and volunteers, as well as other groups. It includes information about the tree's health status, total count, problems that come, and location, among other things.

We used this data to conduct an in-depth analysis with Tableau and create an interactive dashboard with Tableau Desktop that displays numerous characteristics linked to these trees, including borough-by-borough tree species, count, health, and problem. This dashboard has a side bar style with a side Filter pane for user input and a primary Data panes to represent the visual plots and relevant textual associated with the inputs.



Questions to be answered

1. What are the overall statistics of the tree plantation and urban forestry in New York?
2. How is the distribution of plantation among the Borough & different community Board ?
3. Which tree species are most dominant across boroughs in New York?
4. What are the problems associated with the trees and the areas with most affected trees ?
5. What are the places where guard replacement is required?



Data features used in the analysis

Geographical Role Selected:

- Latitude
- Longitude
- Postal Code
- Borough

Categorical Variable:

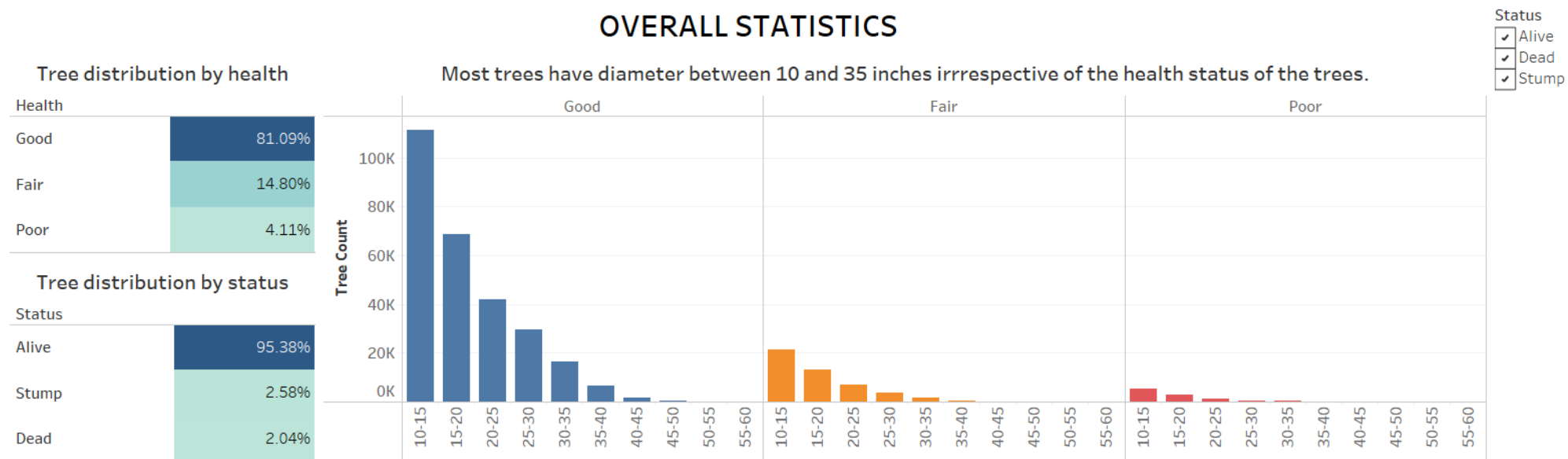
- Tree Status and Health
- Side Walk and Curb indicator
- Guard
- Tree problems
 - Root problems
 - Branch problems
 - Trunk problems

Numerical:

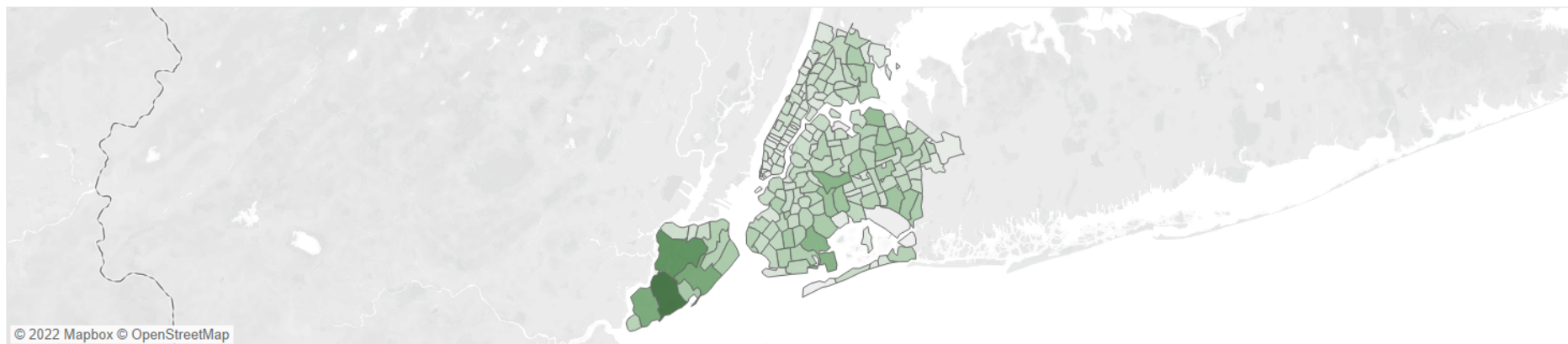
- Tree Diameter by Breast Height



Understanding the tree coverage statistics across NYC

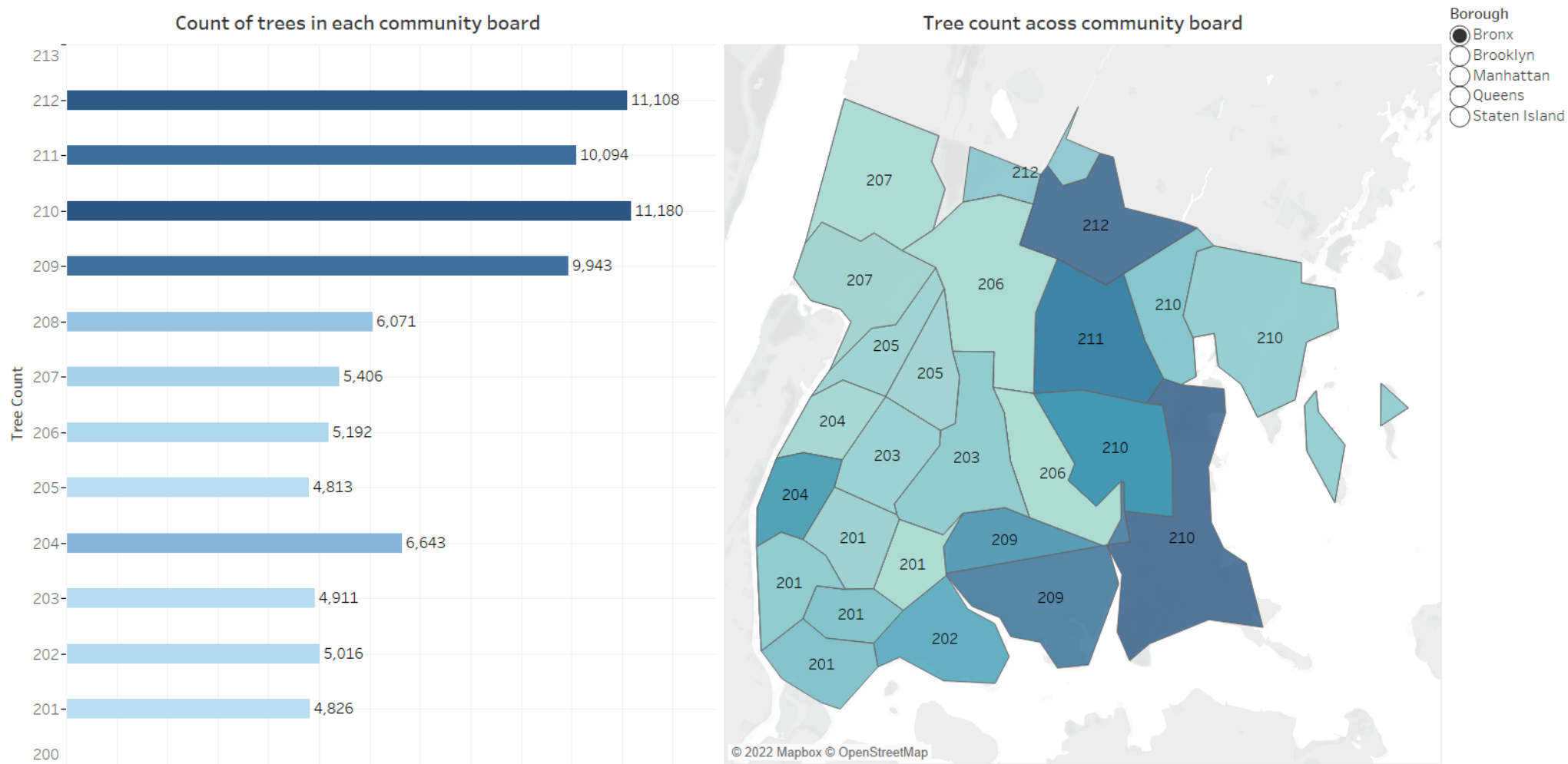


The postcodes 10312 and 10314 in Staten Island have the highest percentage of trees in New York



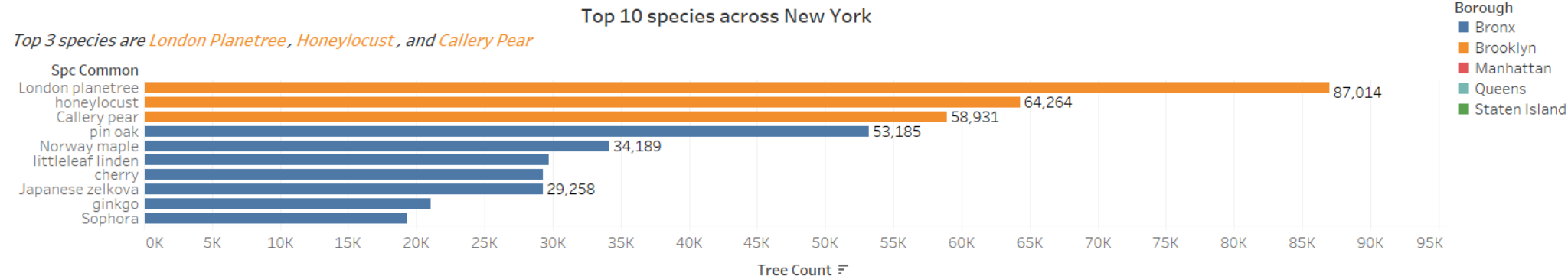
Deeper dive into the tree coverage across communities

TREE COUNT BY COMMUNITY

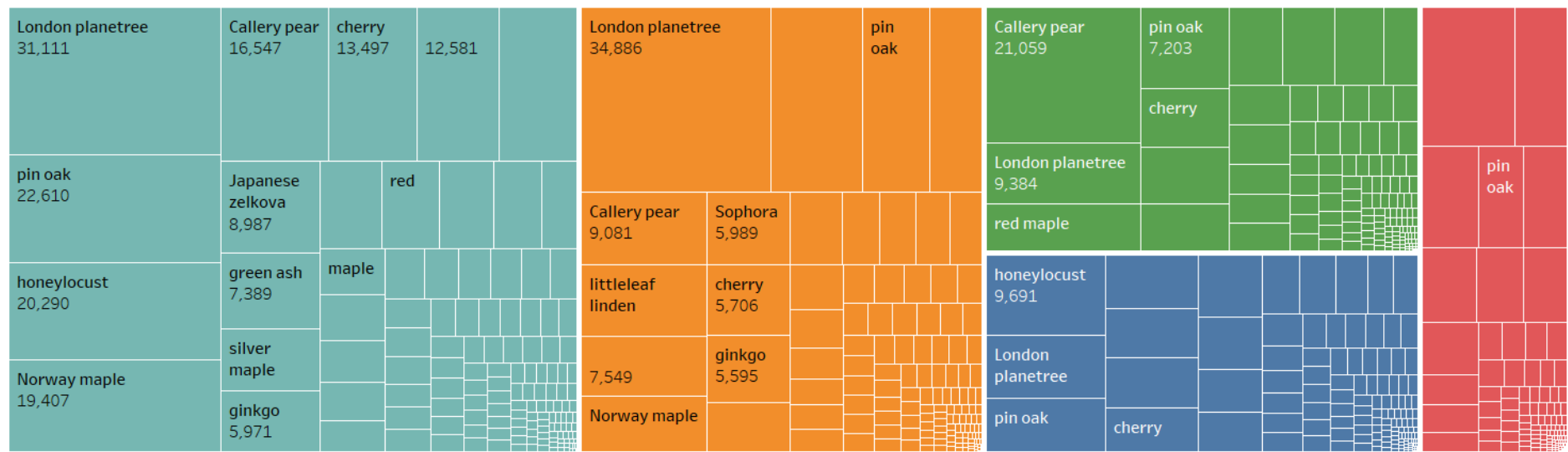


Dominant tree species across NYC and boroughs

MOST COMMON SPECIES ACROSS NEW YORK



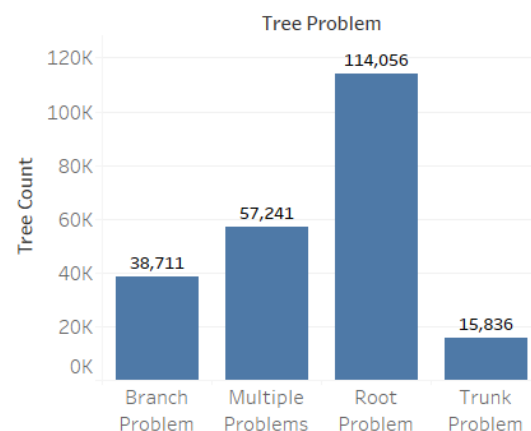
London planetree is the most common specie across Queens and Brooklyn, whereas Honeylocust is the most common specie in Bronx and Manhattan



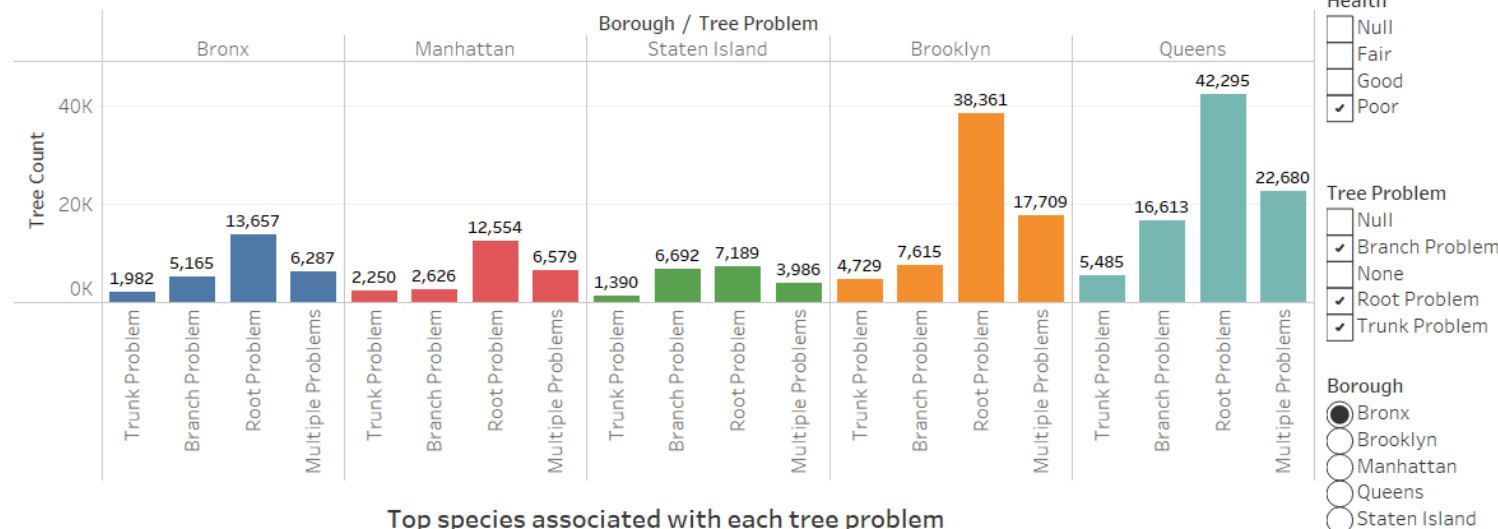
Major problems plaguing the trees in NYC

PROBLEMS ASSOCIATED WITH TREES

Most trees in NYC have root problem



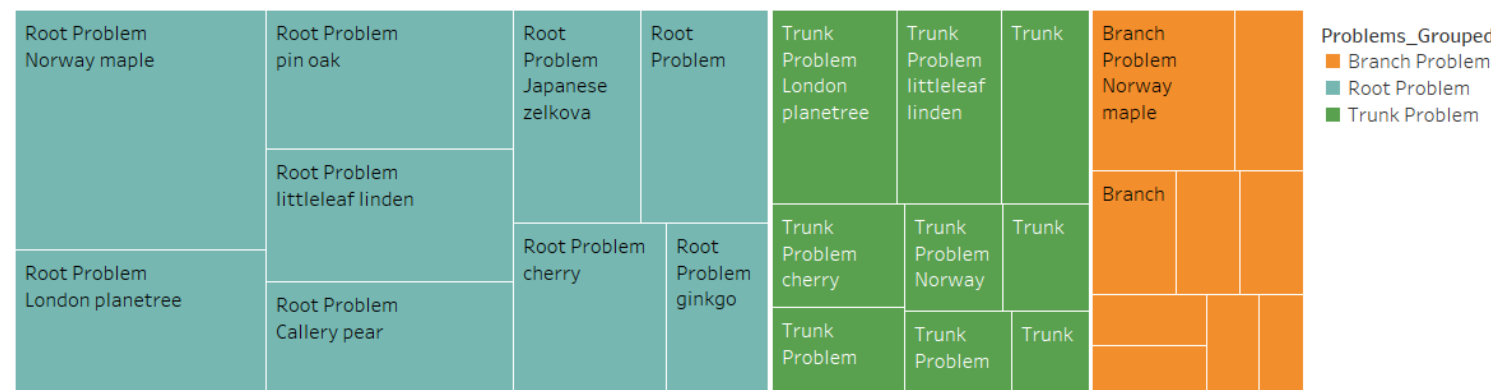
Root and trunk problems are the major issues for trees across different boroughs.



More percentage of trees with branch and trunk problems have helpful guards installed

Tree Problem	Guards			
	Harmful	Helpful	None	Unsure
Branch Problem	2.89%	8.78%	86.01%	2.31%
Multiple Problems	5.80%	5.38%	87.02%	1.80%
Root Problem	4.51%	3.89%	90.69%	0.91%
Trunk Problem	5.51%	12.27%	80.07%	2.15%

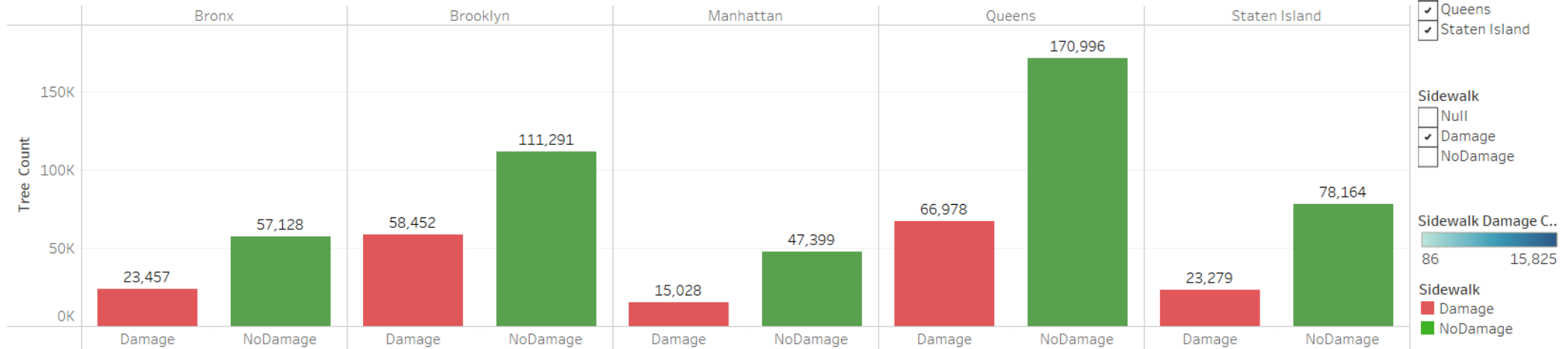
Top species associated with each tree problem



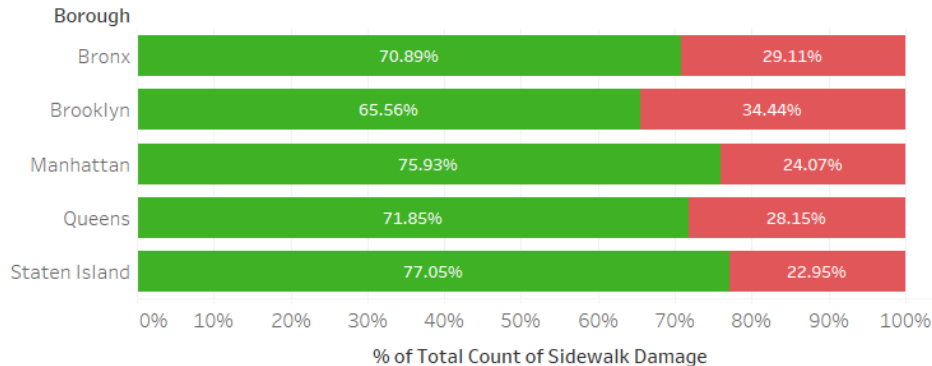
Analyzing the sidewalks damaged by the trees

SIDEWALK DAMAGE ACROSS NEW YORK

Count of damaged & undamaged Sideealks across borough



Brooklyn has the highest percentage of sidewalk damage followed by Bronx and Queens in NYC



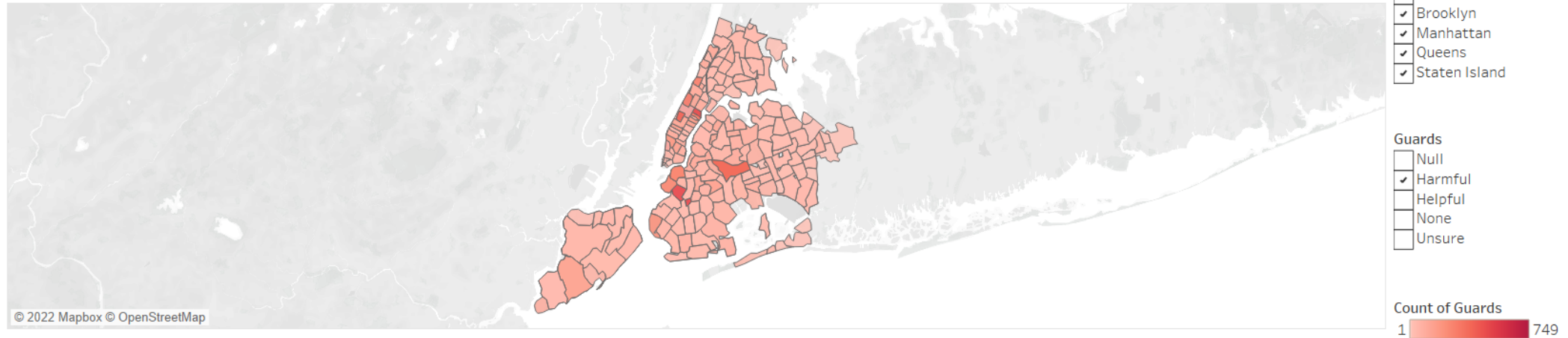
London Planetree and Honeylocust bring most damage to sidewalk across Boroughs in NY

Spc Common	Bronx	Brooklyn	Manhattan	Queens	Staten Island
London planetree	2,663	15,825	971	11,509	3,465
honeylocust	3,649	6,842	4,079	7,128	1,158
pin oak	2,171	4,850	1,131	8,414	2,371
Callery pear	1,396	2,769	1,763	3,510	3,414
Norway maple	1,181	2,772	86	5,991	1,129
littleleaf linden	1,173	3,170	694	3,754	481
Japanese zelkova	1,314	2,771	697	2,093	487
green ash	664	1,547	208	2,959	764
Sophora	836	2,052	1,180	1,427	253
ginkgo	772	1,690	1,473	1,252	121

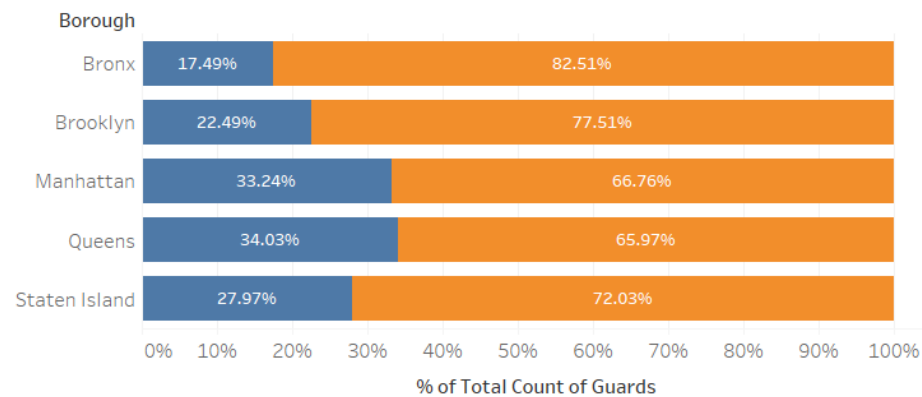
Guards posing threats to the trees

GUARD REPLACEMENTS ACROSS NYC

Harmful tree guards needs replacement primarily at Manhattan and Queens, NY



Harmful Tree guard ratio was highest in Queens followed by Manhattan in NY



Top 10 Tree Species needed guard replacement across Boroughs in NY

Spc Common	Borough				
	Bronx	Brooklyn	Manhattan	Queens	Staten Island
honeylocust	103	641	2,119	362	34
Callery pear	98	495	1,349	401	360
London planetree	62	837	414	365	42
ginkgo	58	227	1,092	104	13
littleleaf linden	43	418	591	240	17
Sophora	54	281	751	91	11
pin oak	86	390	453	185	63
Norway maple	41	334	26	366	32
Japanese zelkova	43	254	327	143	20
green ash	25	158	115	276	17

Conclusion and Recommendation

- 4.5% of trees across New York needed immediate attention for their poor health
- Honey locust is common in Manhattan & Bronx whereas London Planetree is common In Brooklyn & Queens
- Most common problem associated to plant are related to its roots
- Norway Maple which is highly prone to root problems and branch problem is having poor health status
- Brooklyn reported the highest percentage of sidewalk damages among all the borough followed by Bronx & Queens
- Harmful plant guards are in higher proportion in Queens and Manhattan corresponding to the total number of tree guards present
- Proper planning of electric lines distribution across the city will help preventing the branch problem among trees
- Studying certain species having high poor status might help in solving a major cause
- Timely replacement of harmful guards might help save potential damage to healthy trees

Thank
you