Prof. Mykhaylo Trubskyy

ALY 6070

Final Project

2015 NYC Street Trees Census

By

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Introduction

2015 NYC Street Tree Census Dataset has **683788** records with **45** attributes

Surveyed and collected by the **Volunteers**, **Staff**, and **Organizations**

This dataset consists of information regarding the Street Trees and its attributes

We will be using a couple of **correlations** among various attributes to address the **Business Problems** and improve the **Green Ecosystem** in the city accordingly

In this, every Tree is a single Data point and each Tree is necessary to play a vital role for Dashboarding and Analysis

We have built an Interactive Dashboard using **Tableau** and **R Shiny**

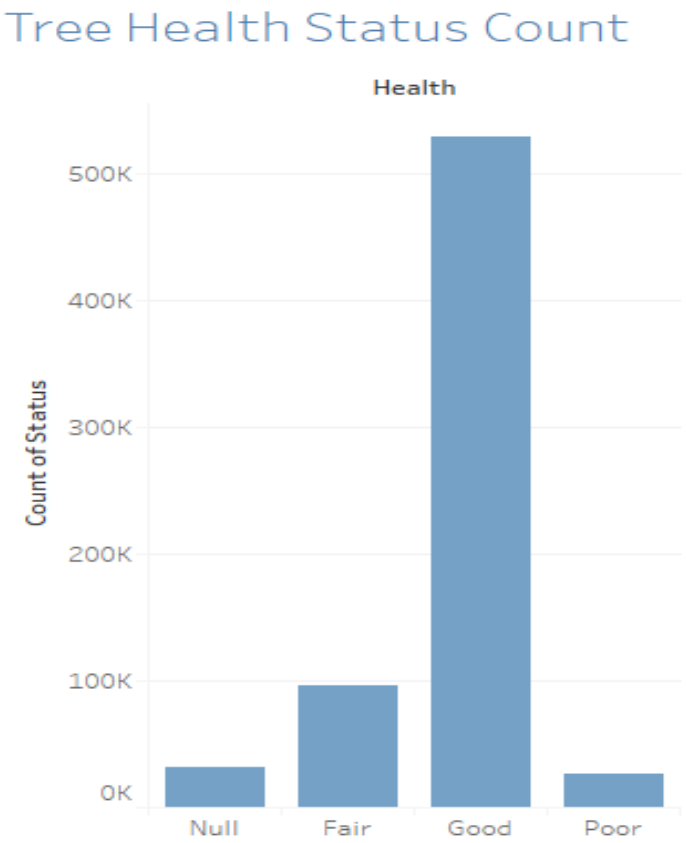
Tree Health Overview

Y-Axis indicates the Count of tree health status. X-Axis represents the condition as Null, Fair, Good and Poor

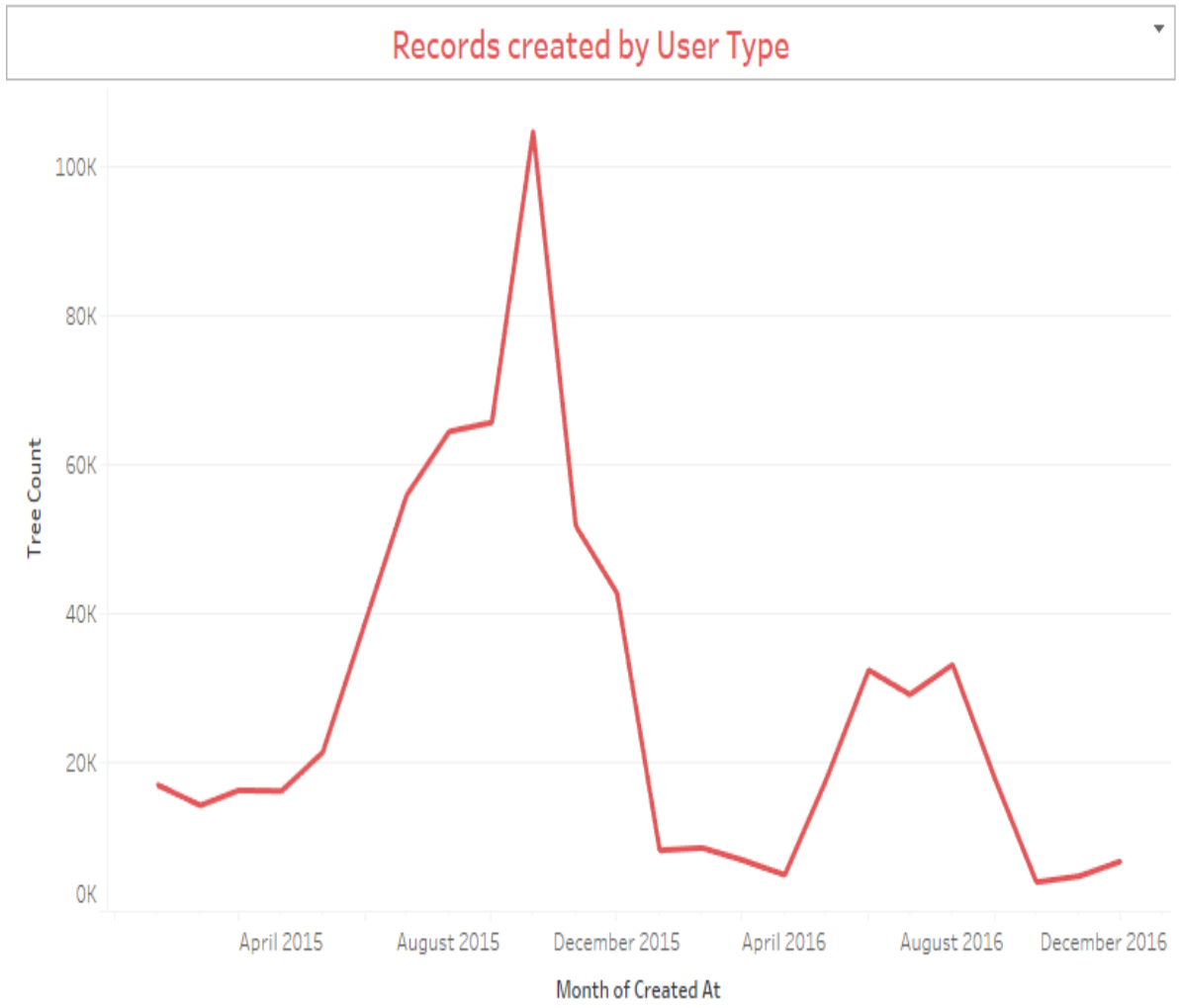
In an overview, **79.4%** of trees were rated to be in Good condition, **14.5%** were counted to be Fair, **4.2%** as poor and the remaining **2.1%** was counted as Null or dead trees

More than **500K** Trees health have been recorded as Good. **30K** as Null, **95K** as Fair, and 25k as Poor

After some analysis, we see that **Bronx** has the highest recorded trees that are in Good condition followed by **Queens** and **Staten Island**



Records Created by User Type



Data collected by NYC Parks staff, Trees Count Staff and Volunteers

20K trees has been created by all the user types in April 2015

Highest count is **120K** trees in the month of October 2015

Lowest count is **4K** in April 2016 and October 2016

Sudden **decrease** in tree count was recorded in December 2015 and January 2016

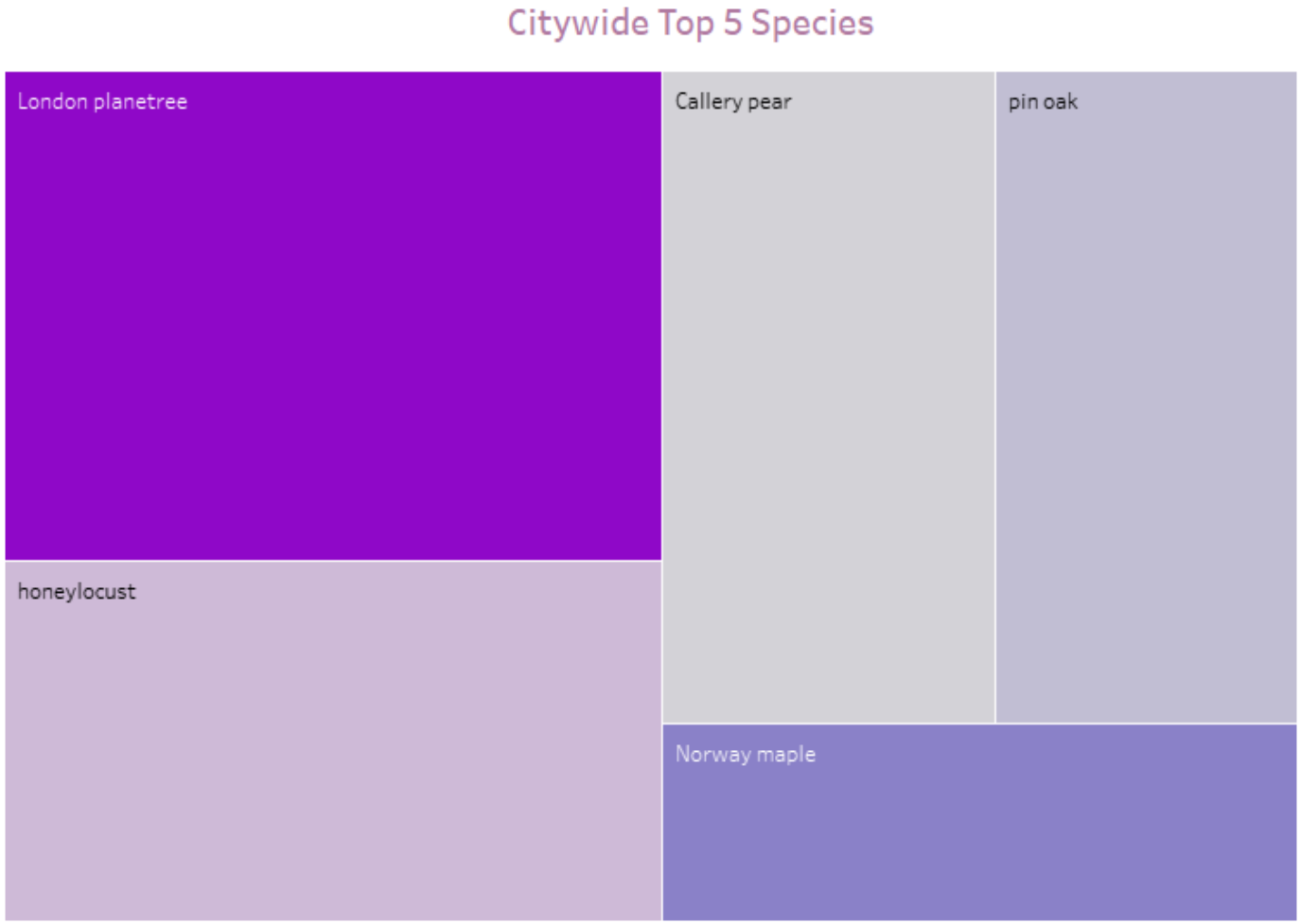
Great **increase** in the trees count which were recorded in between the months of August and December 2015

Citywide Top 5 Species

Almost **132** varieties of Species of the street trees across citywide

The **Top 5** species include **London Planetree, honey locust, Callery pear, Pin oak** and **Norway maple**

The London Planetree species was the most prominent one during the years **1995** and **2005** census as well

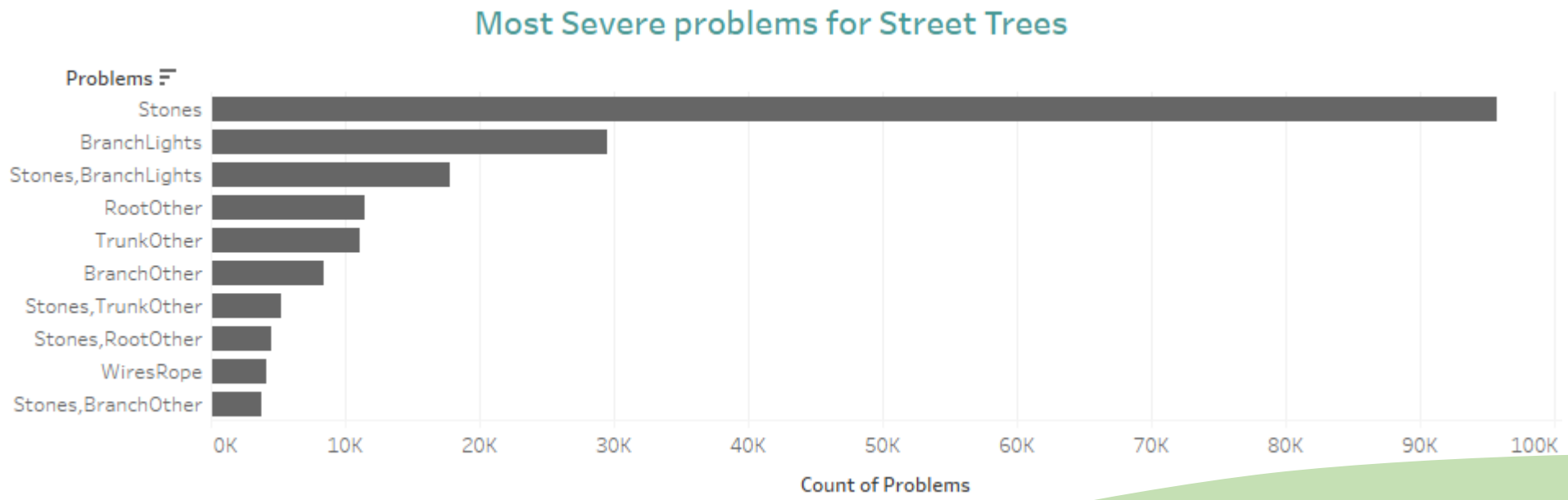


Most Severe Problems for Street Trees

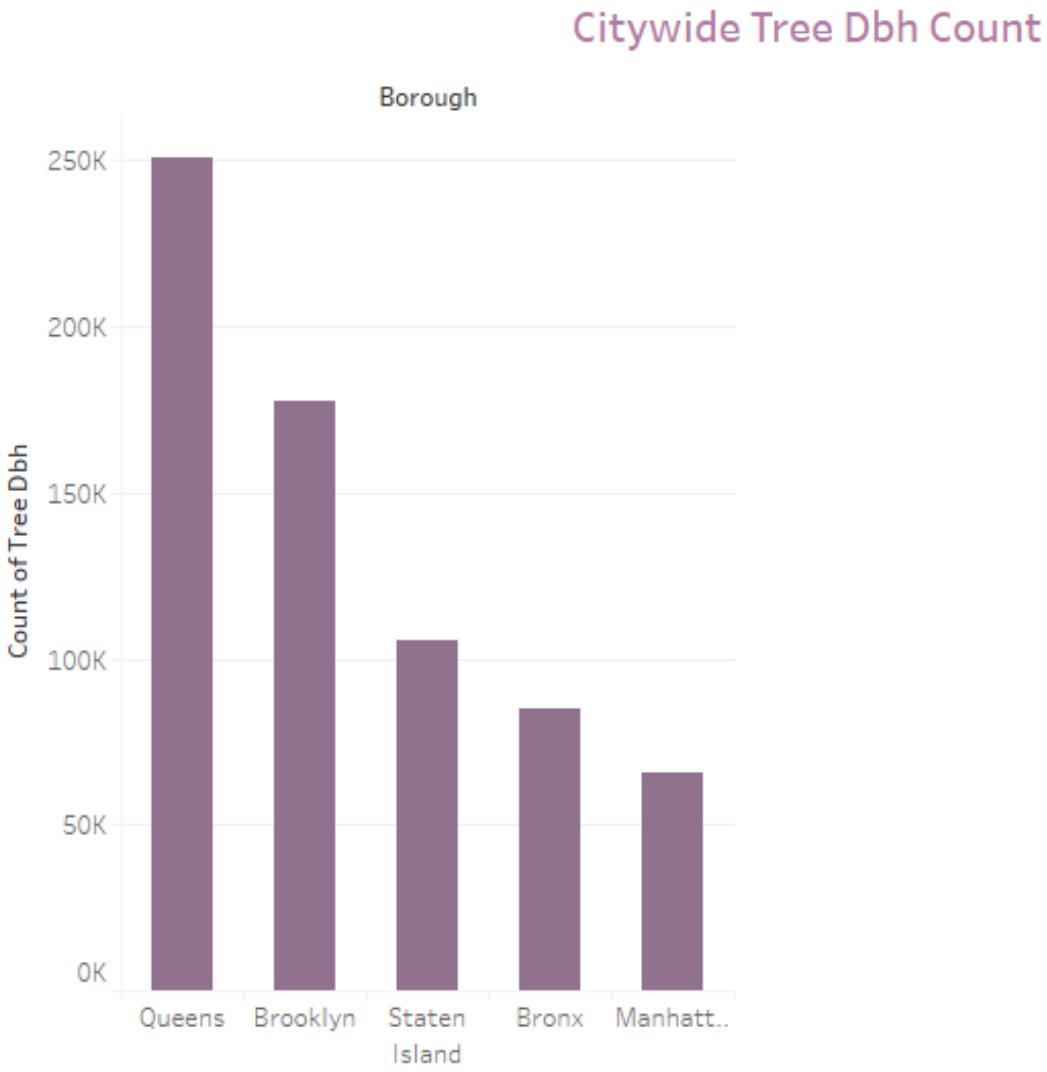
Trees have problems like Stones, BranchLights, Roots, Trunks, WiresRope etc., which are creating Growth issues and Health conditions

X-Axis represents the Count of Problems affected by each problems that are represented on the Y-Axis

As we can see, that the Stones are creating the **highest** amount of **problem** to almost **95.5K** trees count whereas the lowest recorded problem is **Stones**, **BranchOther** for almost 3.5K trees count



Citywide Tree DBH Count



DBH (Diameter at breast height) is a standard method of measuring the size of a Tree.

In the USA, this measurement is taken at **4.5** feet above the ground level

According to the latest NYC 2015 Street Trees Count report, there are almost **683,788** trees in the **NYC**

Y-axis represents the count of Tree DBH ranging from **0K - 250K** whereas, the X-axis represents 5 boroughs

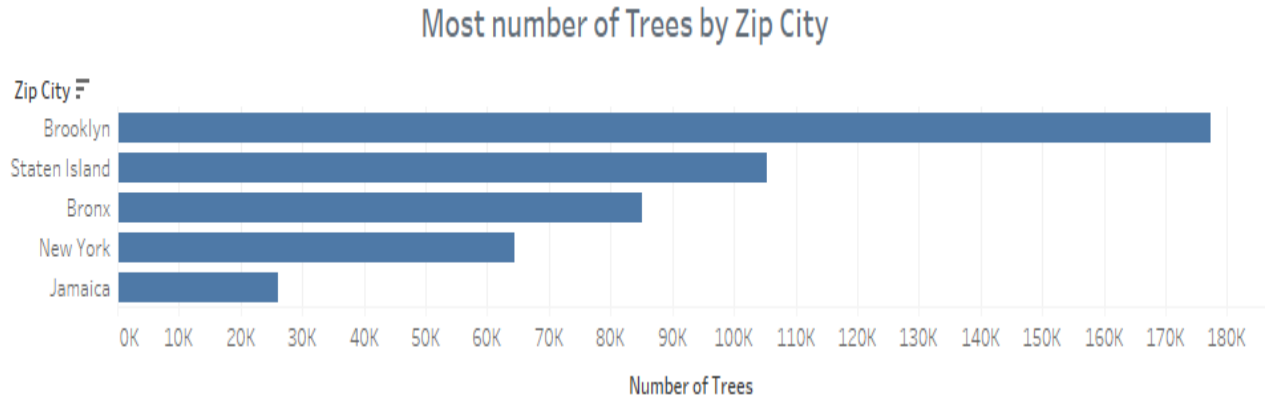
Queens has more trees than any other borough, almost **0.25 Million** count of tree DBH has been recorded

Manhattan has the **lowest** count of tree DBH almost equivalent to **65K**

Most vs Least Number of Trees by Zip City

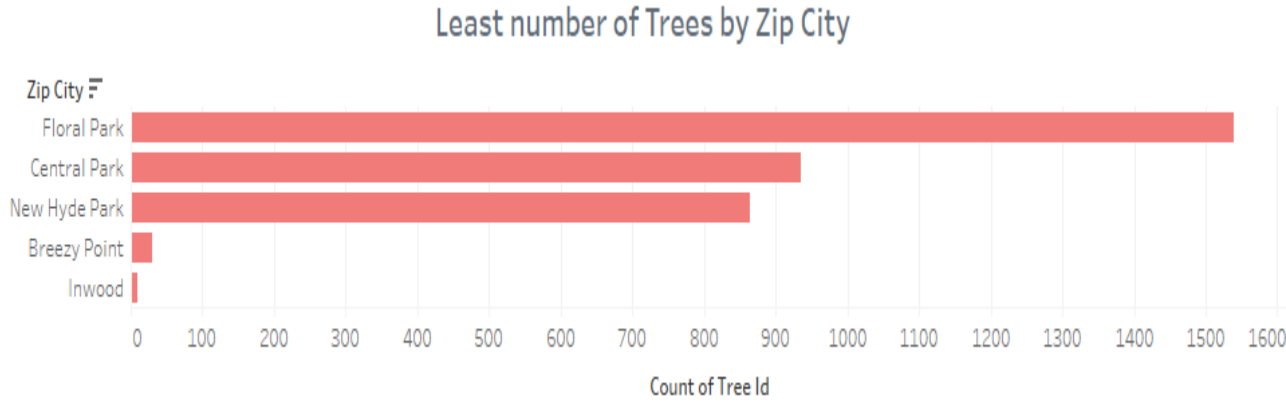
X-axis has the number of trees count ranging from **0K** to **180K**

Brooklyn has the highest number of trees of almost **178K**, Staten Island has recorded **105K** trees, **Bronx** has about **85K** tree count, followed by **New York** which has **64K** trees and finally **Jamaica** with **25K**

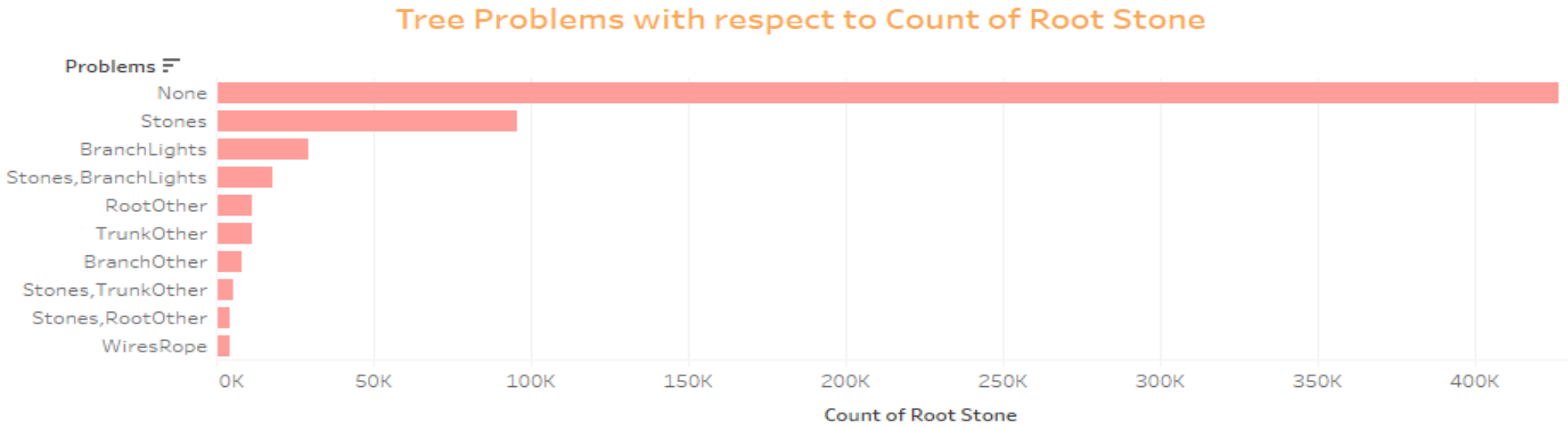


X-Axis has Count of Tree ID ranging from **0 - 1600**

Inwood has the lowest count of trees which is about 10, followed by **Breezy Point** which has almost **30** trees, **New Hyde Park** has **860**, **Central Park** has **930** and lastly **Floral Park** has about **1535** tree count



Tree Problems due to Root Stone



Trees have problems due to Root Stone which will make Tree core **weak** and causes several issues

X-Axis represents the Count of Root Stone affected by each problems that are represented on the Y-Axis

As we can see, that the Stones are creating the **highest** amount of **problem** to almost **96K** trees count whereas the lowest recorded problem is **WiresRope** for almost 5K trees count

Count of Sidewalk spread over the NYC

As we can see, that the **Sidewalk** spread over the NYC

Plotted using Maps with real-time data and visualized with a range varying from **7** to **21,356**

We have used **Zip Codes** to showcase the amount of spread in the city.

R Shiny Dashboard

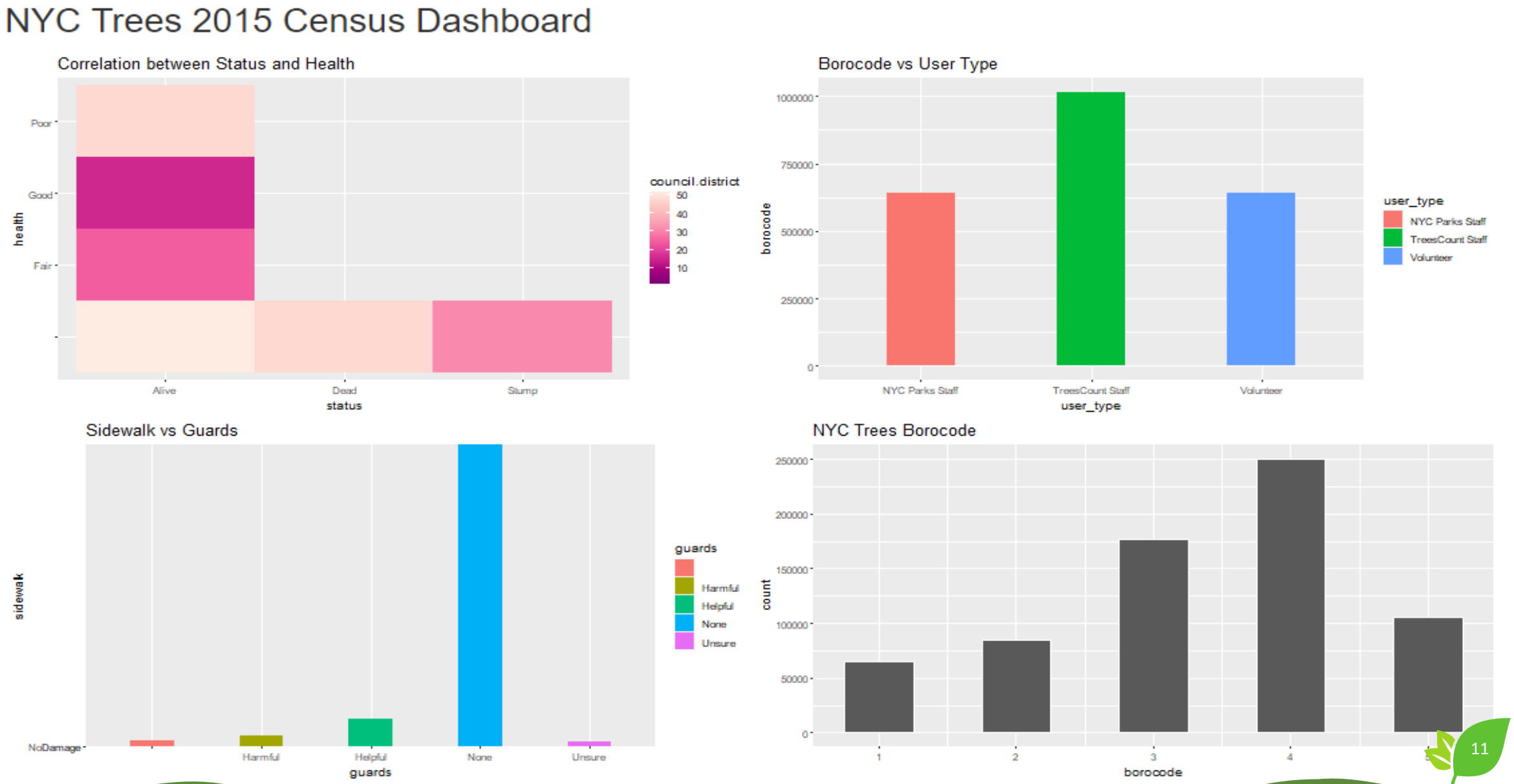
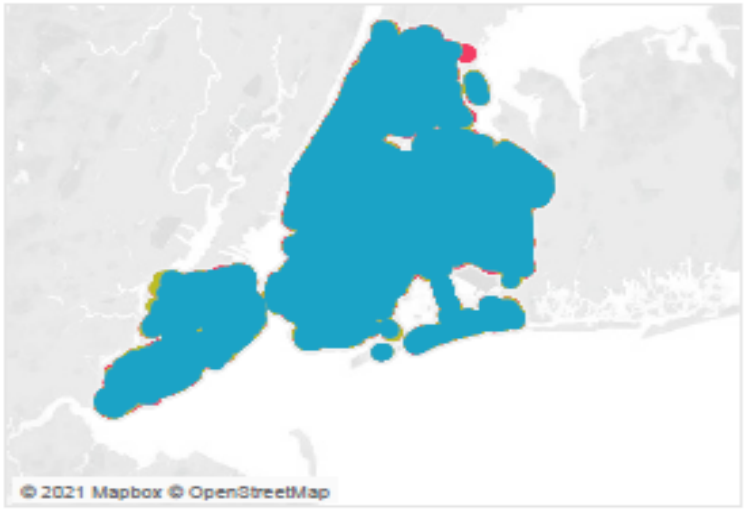


Tableau Dashboard 1

NYC Trees Census Dashboard

Geospatial View of Tree Health & Status



Citywide Top 5 Species

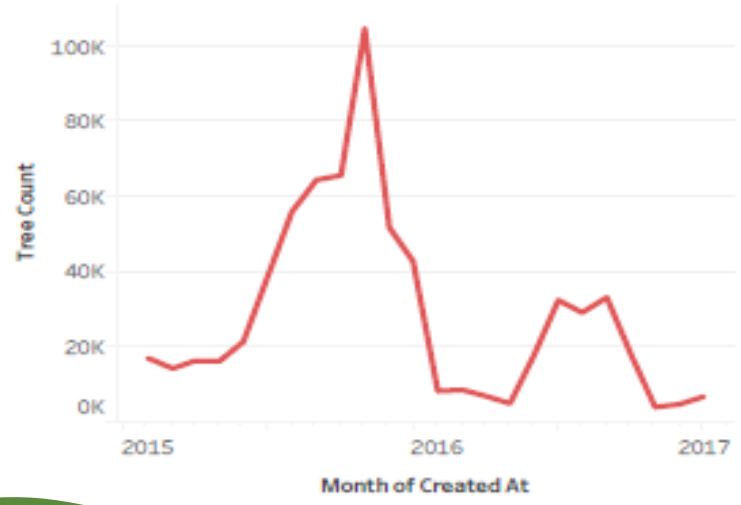
Trees Count
34,189 — 87,014

Status
- Alive
- Dead
- Stump

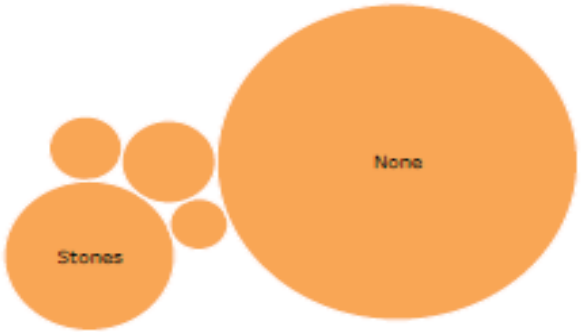
Health
- Null
- Fair
- Good
- Poor

User Type
- NYC Parks Staff
- TreesCount Staff
- Volunteer

Records created by User Type



Top 5 Problems



Citywide Total: 683,788 Trees

Borough	
Bronx	85,203
Brooklyn	177,293
Manhattan	65,423
Queens	250,551
Staten Island	105,318

Tableau Dashboard 2

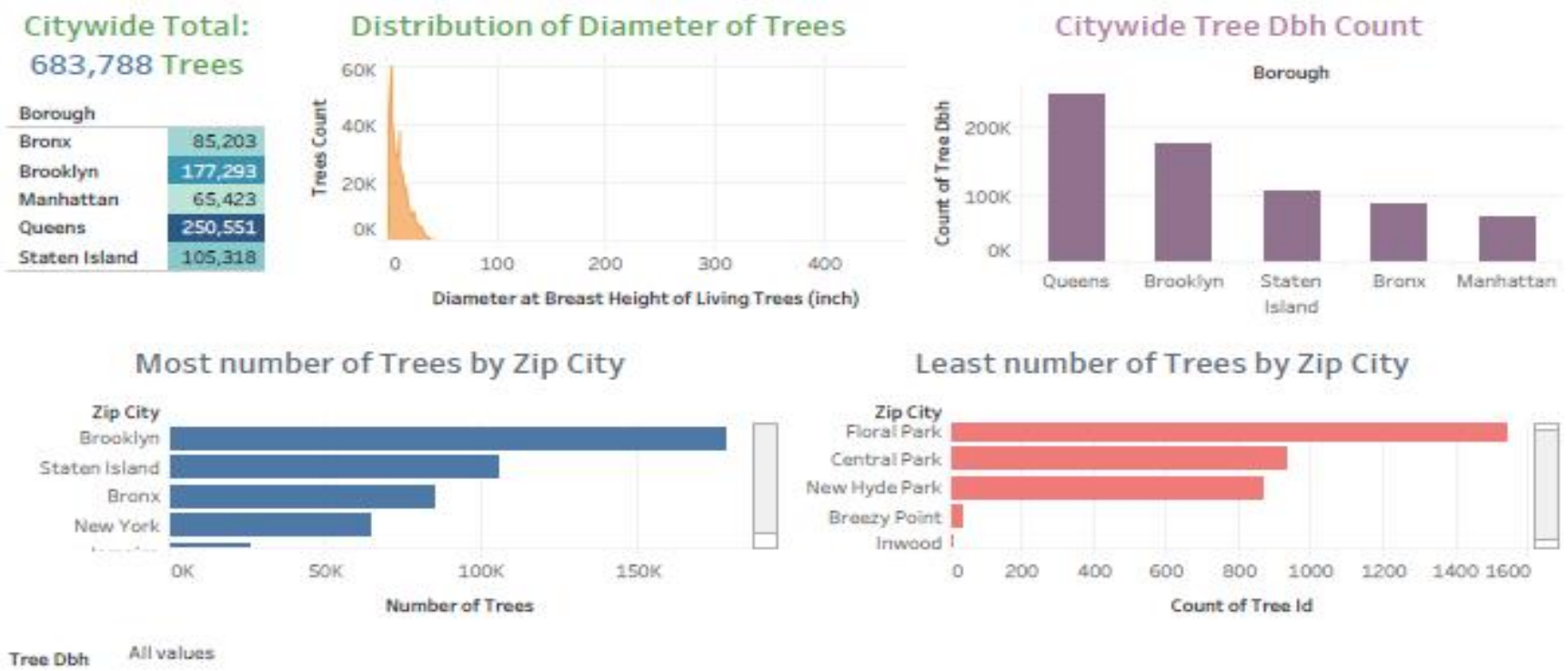


Tableau Dashboard 3

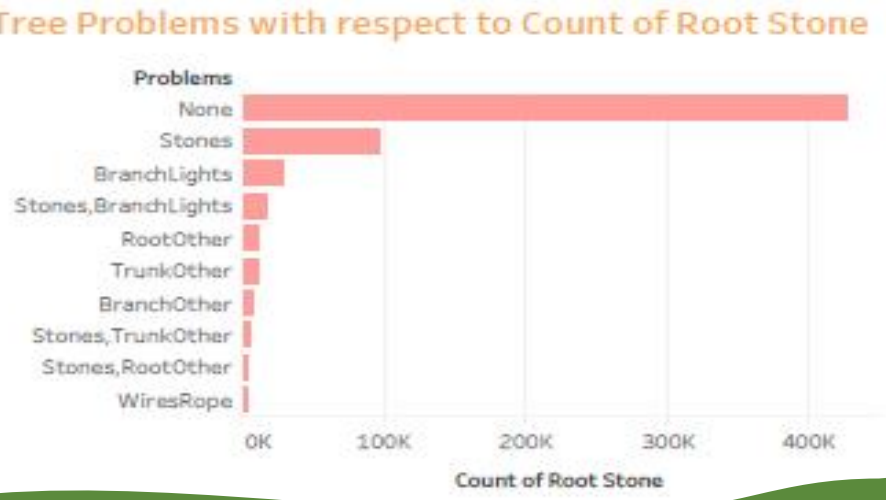
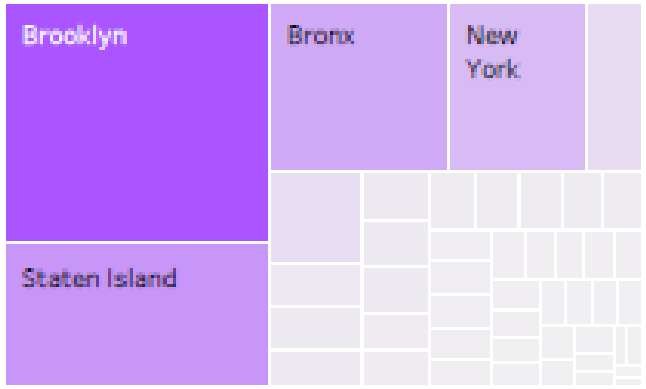
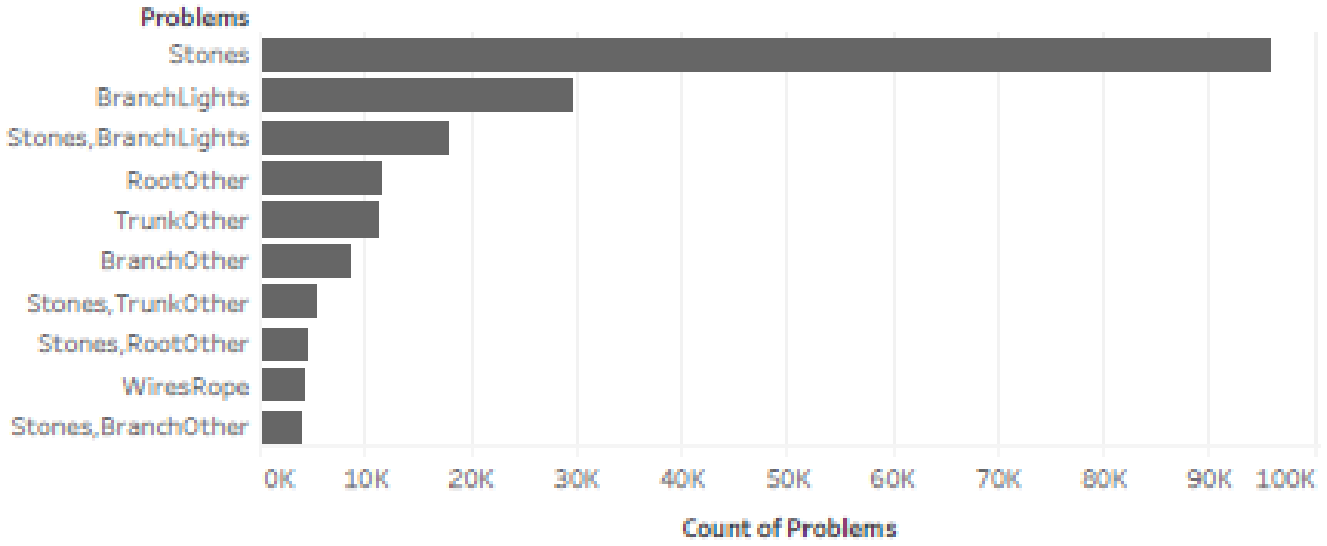


Tableau Dashboard 4

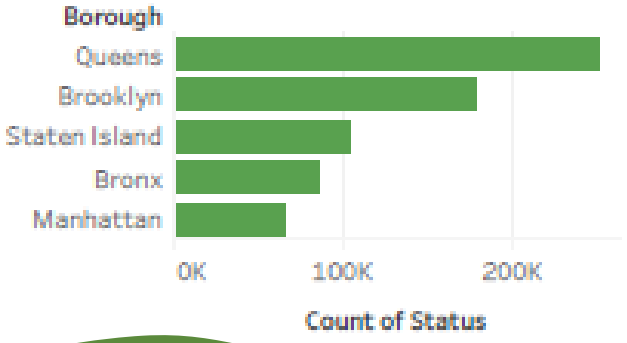
Relation between Spc Common and Zip City



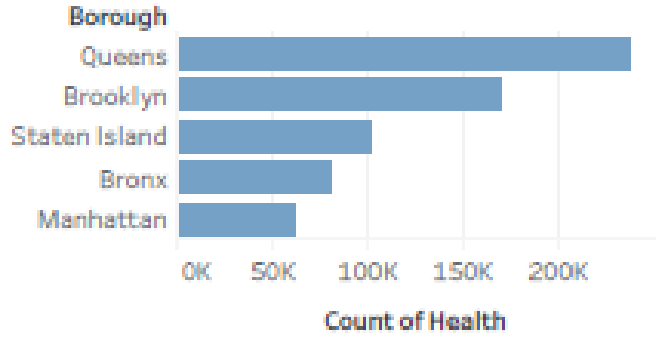
Most Severe problems for Street Trees



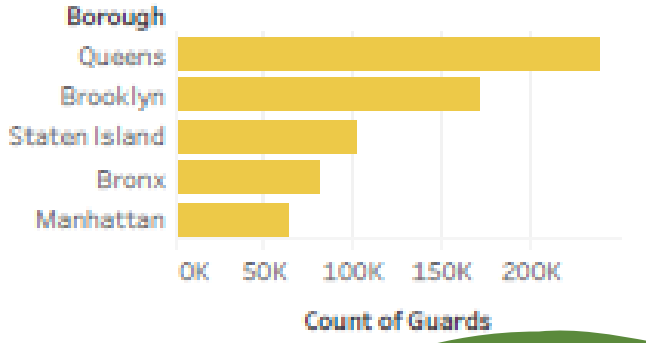
Top 5 Borough wide Status Distribution



Top 5 Borough wide Health Distibution



Top 5 Borough wide Guards Distibution



Conclusion

Increase the Water and Pesticides **resources** for Saplings and small plants

Utmost **care** needs to be taken for **Manhattan** and provide with right staff for improvements

Health **checkup** and proper care should be implemented

NYC must allocate necessary **funds** and raise money from the NGO's, Volunteers, and **Organizations**

The City representatives must take **precautions** by implementing proper **policies** and procedures

Increase the number of **Green Initiative Campaigns** throughout the city

Remove unwanted trees and support for continuous **maintenance**