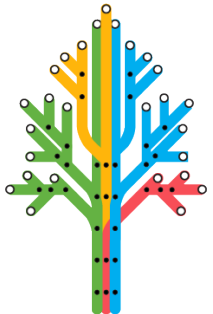




Celebrating Biodiversity – Lessons from San Francisco's Street Tree Inventory

Kelaine Ravdin
Urban Ecos, LLC

kelaine@urban-ecos.com



Urban Ecos

Portsmouth Square, 1851



Telegraph Hill from Vallejo St Wharf, 1866



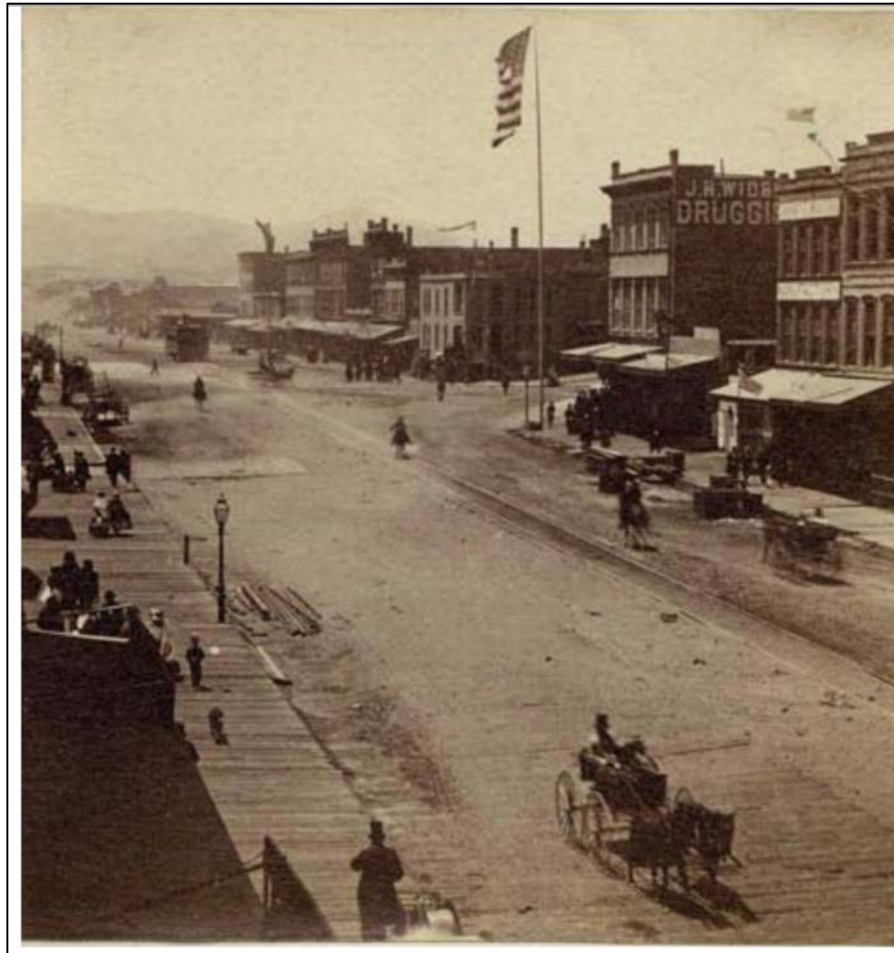
“...perfectly bare of trees or shrubs — and almost awfully bleak ...”

—Frederick Law Olmsted writing to his wife in 1863

Powell and Clay, 1867



Market St, looking west, 1860s



“There is not a full grown tree of beautiful proportions near San Francisco...”

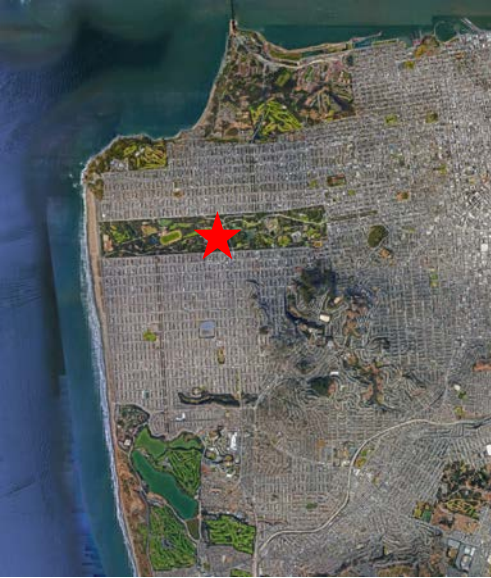
—Frederick Law Olmsted, 1867

Marin Headlands

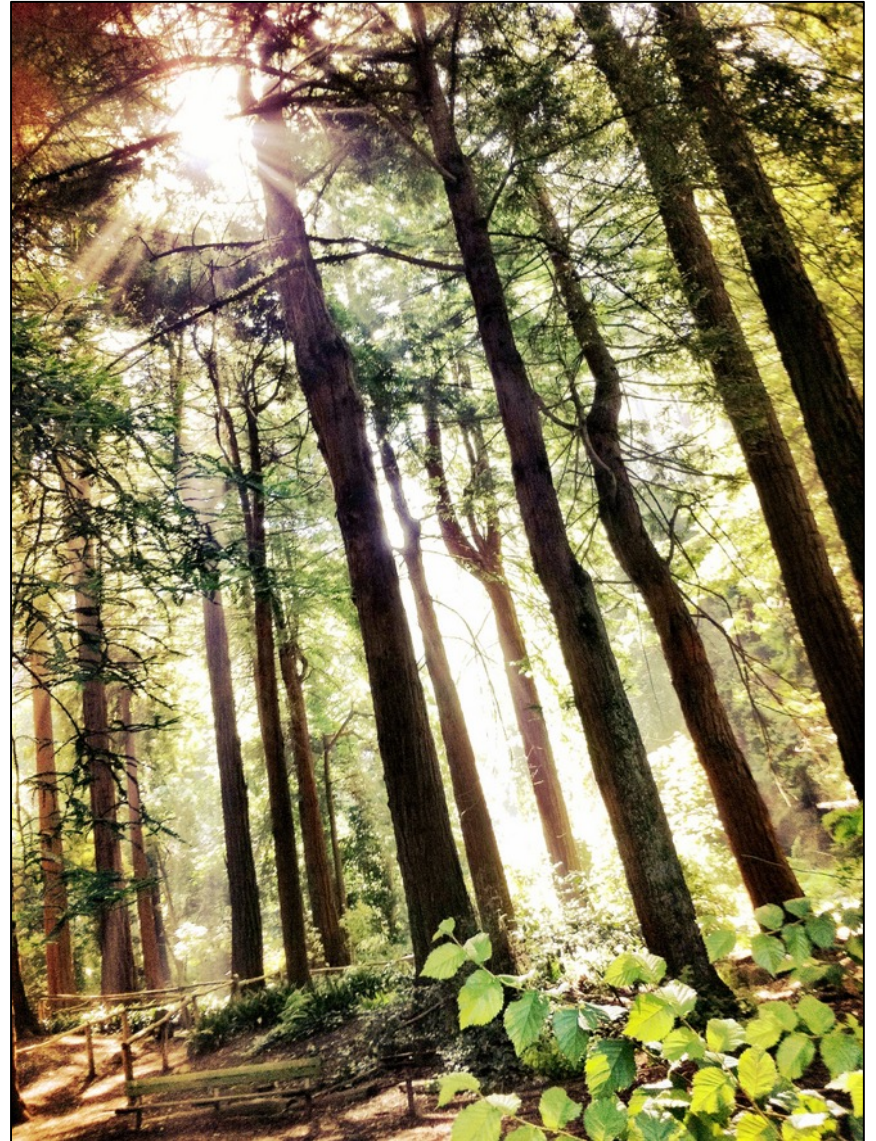




Golden Gate Park



Stern Grove





Presidio



San Francisco from Dolores Park



San Francisco Street Trees, 2017

Number of species

521

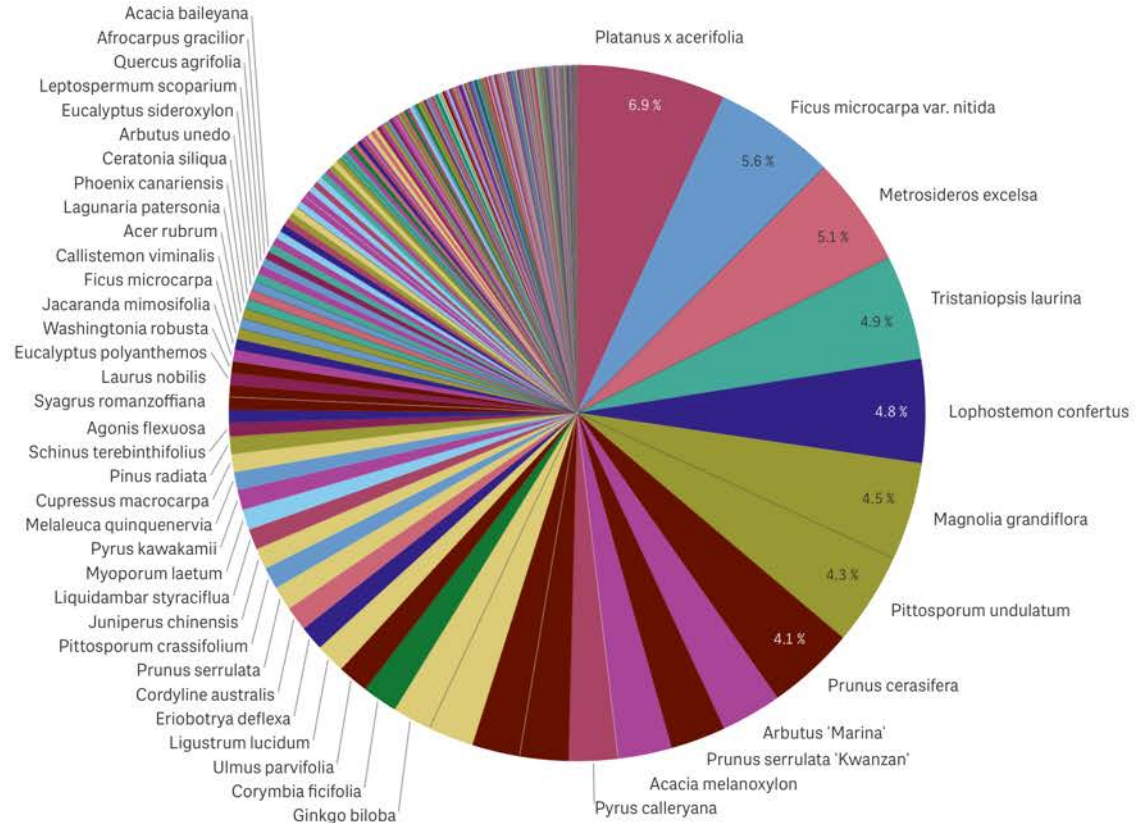
Number of trees

124,619

Species distribution *

Species	Q	Number of trees
Totals		124,619
Platanus x acerifolia		8,620
Ficus microcarpa var. nitida		7,024
Metrosideros excelsa		6,334
Tristaniaopsis laurina		6,067
Lophostemon confertus		5,998
Magnolia grandiflora		5,639
Pittosporum undulatum		5,397
Prunus cerasifera		5,078
Arbutus 'Marina'		3,507
Prunus serrulata 'Kwanzan'		3,196
Acacia melanoxylon		3,094
Pyrus calleryana		2,844
Olea europaea		2,800
Maytenus boaria		2,779
Callistemon citrinus		2,608

* Currently showing a limited data set.



Species distribution



London planes, Market St.



cc2.0 by Thomas Hawk, flickr

London planes, City Hall



cc2.0 by sswj, flickr

Species distribution, citywide

Overview

Number of species

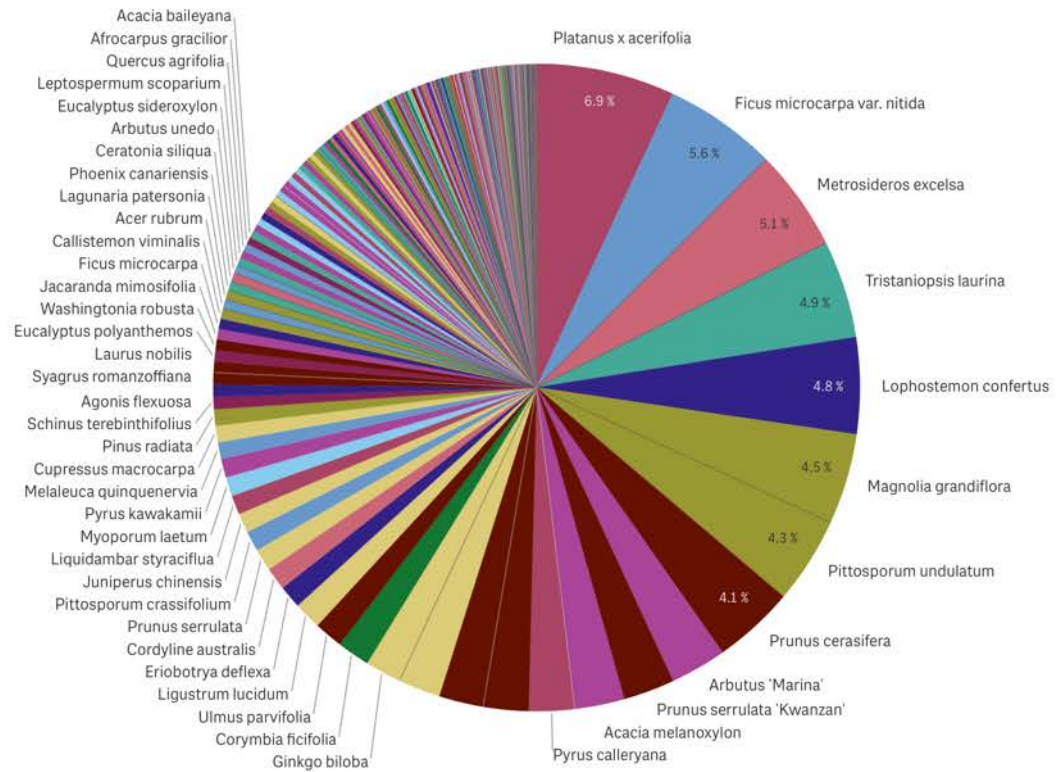
521

Number of trees

124,619

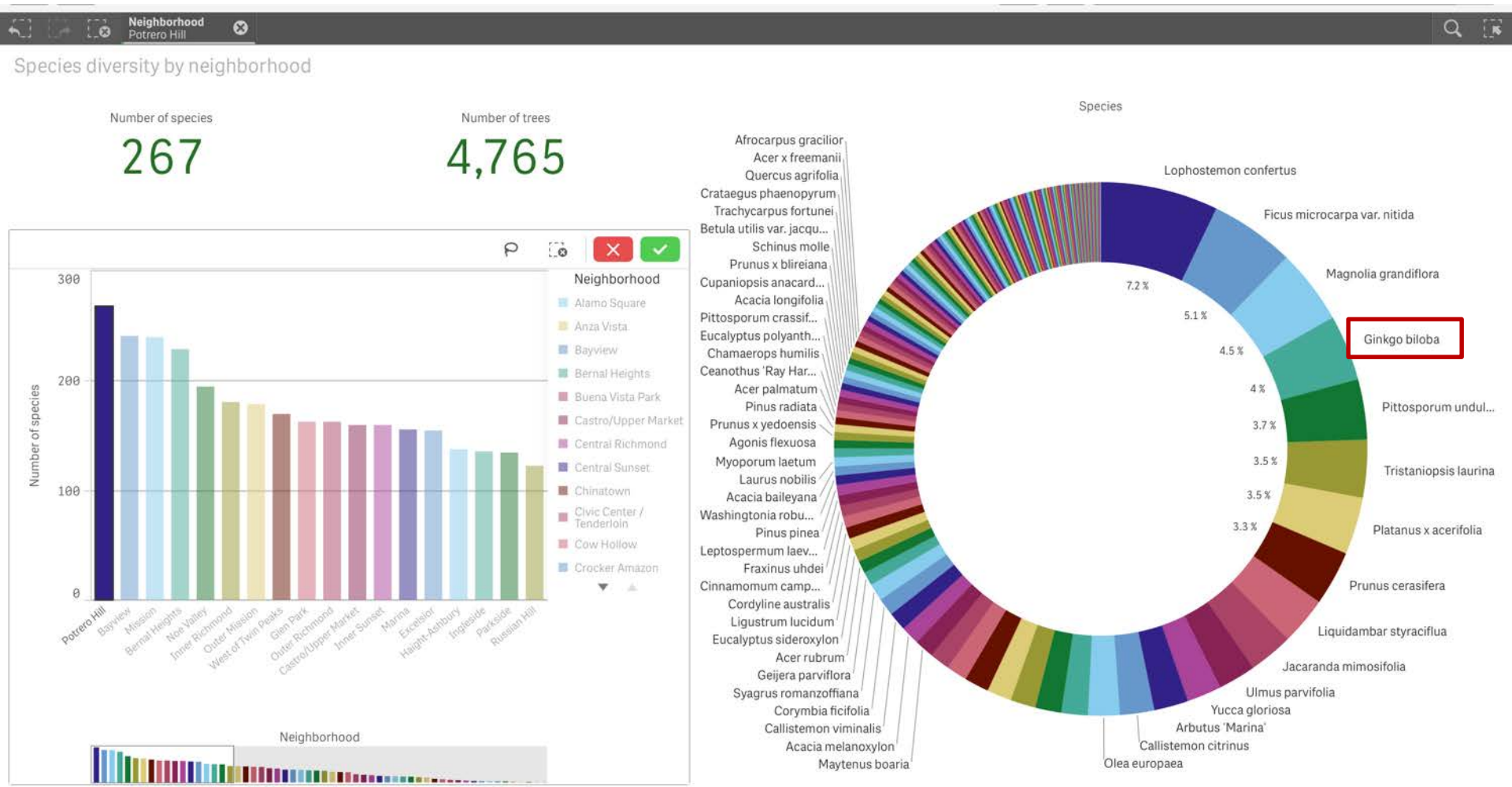
Species distribution *

Species	Q	Number of trees	Species distribution (%)
Totals		124,619	100.0%
Platanus x acerifolia		8,620	6.9%
Ficus microcarpa var. nitida		7,024	5.6%
Metrosideros excelsa		6,334	5.1%
Tristaniaopsis laurina		6,067	4.9%
Lophostemon confertus		5,998	4.8%
Magnolia grandiflora		5,639	4.5%
Pittosporum undulatum		5,397	4.3%
Prunus cerasifera		5,078	4.1%
Arbutus 'Marina'		3,507	2.8%
Prunus serrulata 'Kwanzan'		3,196	2.6%
Acacia melanoxylon		3,094	2.5%
Pyrus calleryana		2,844	2.3%
Olea europaea		2,800	2.2%
Maytenus boaria		2,779	2.2%

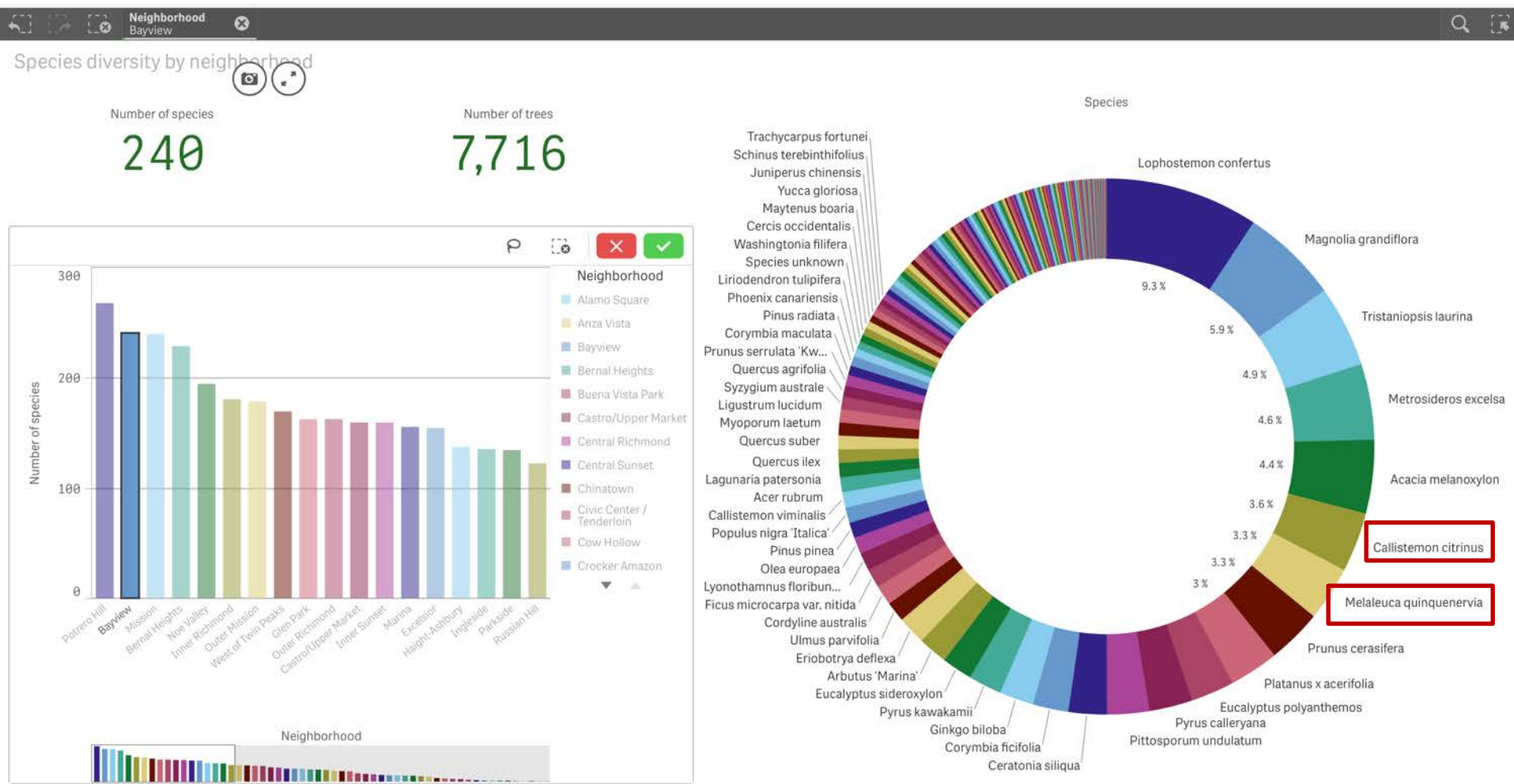


* Currently showing a limited data set.

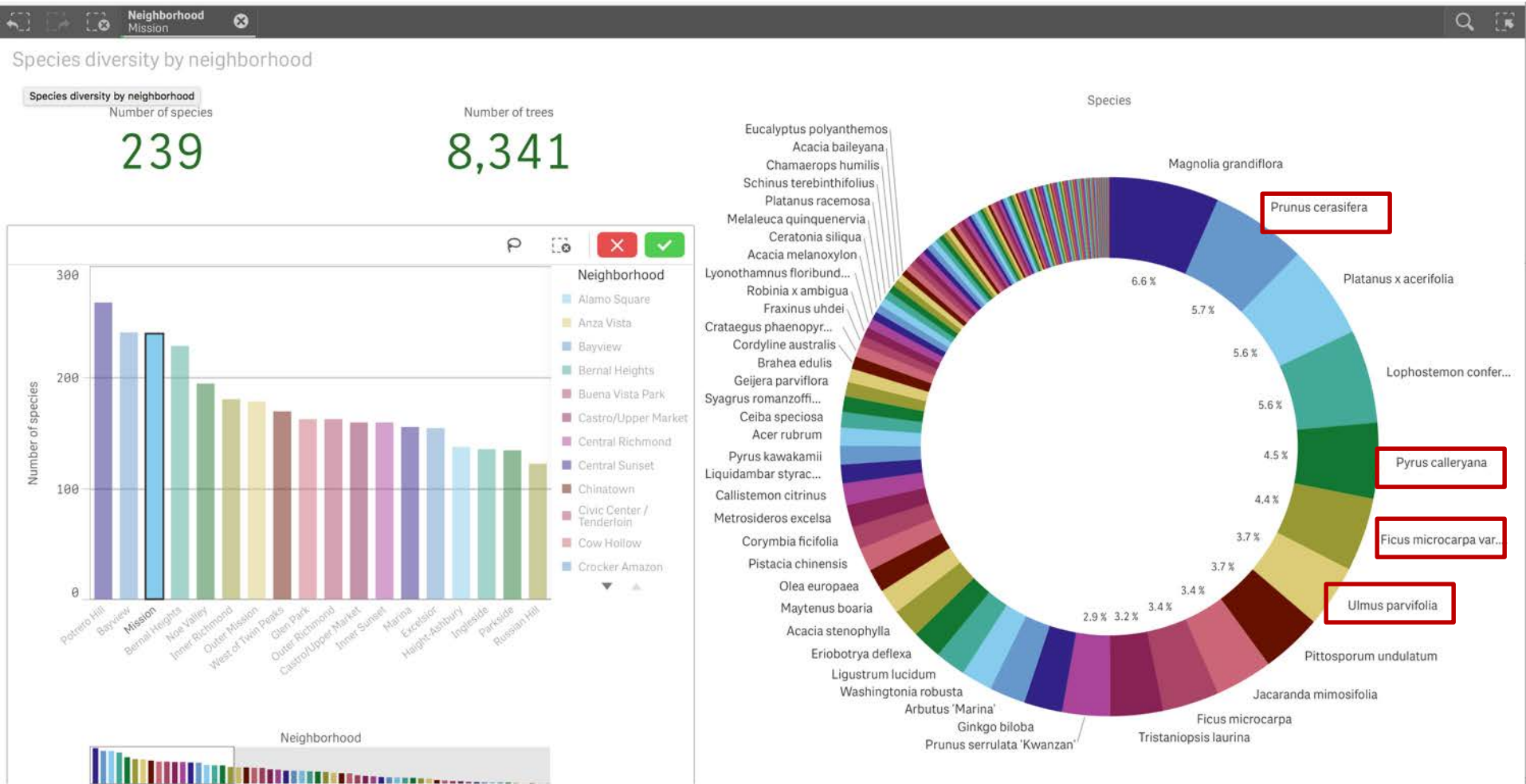
Species distribution, Potrero Hill



Species distribution, Bayview



Species distribution, Mission



Species distribution, Outer Sunset

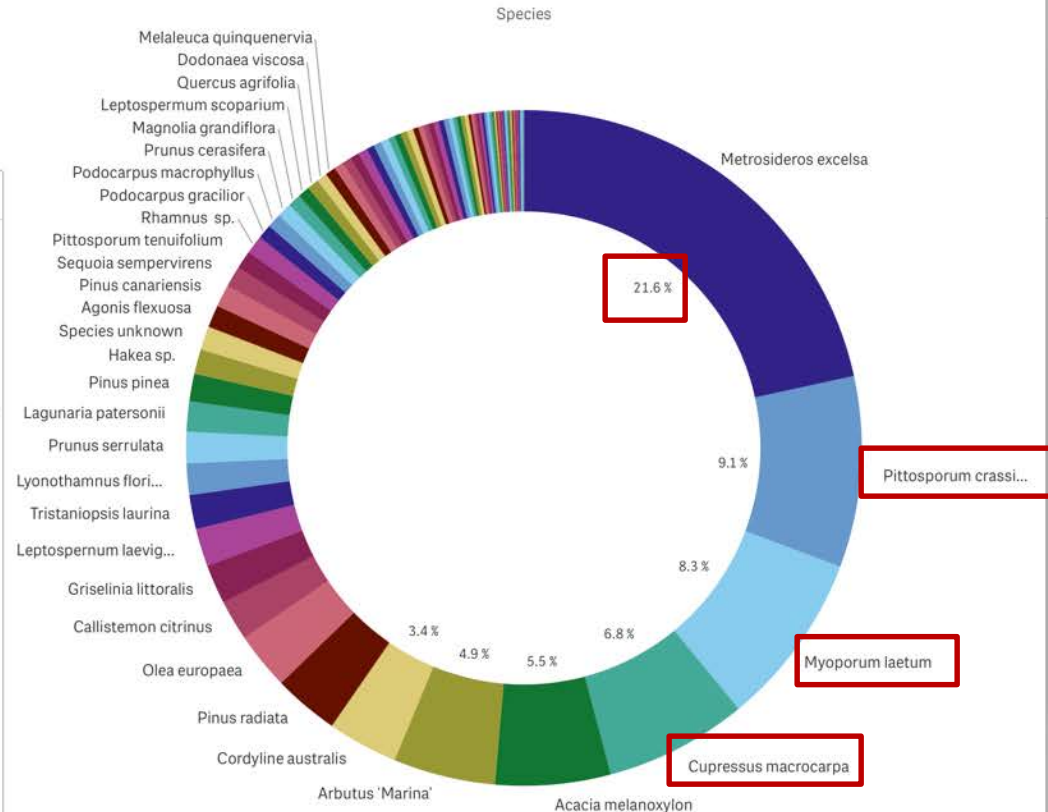
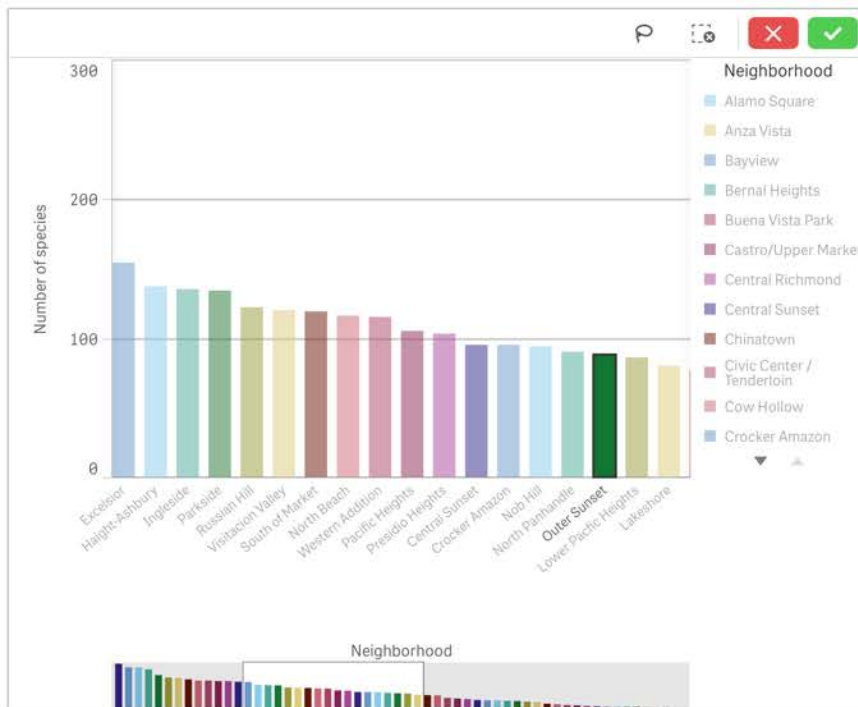
Species diversity by neighborhood

Number of species

88

Number of trees

1,598



Rare species



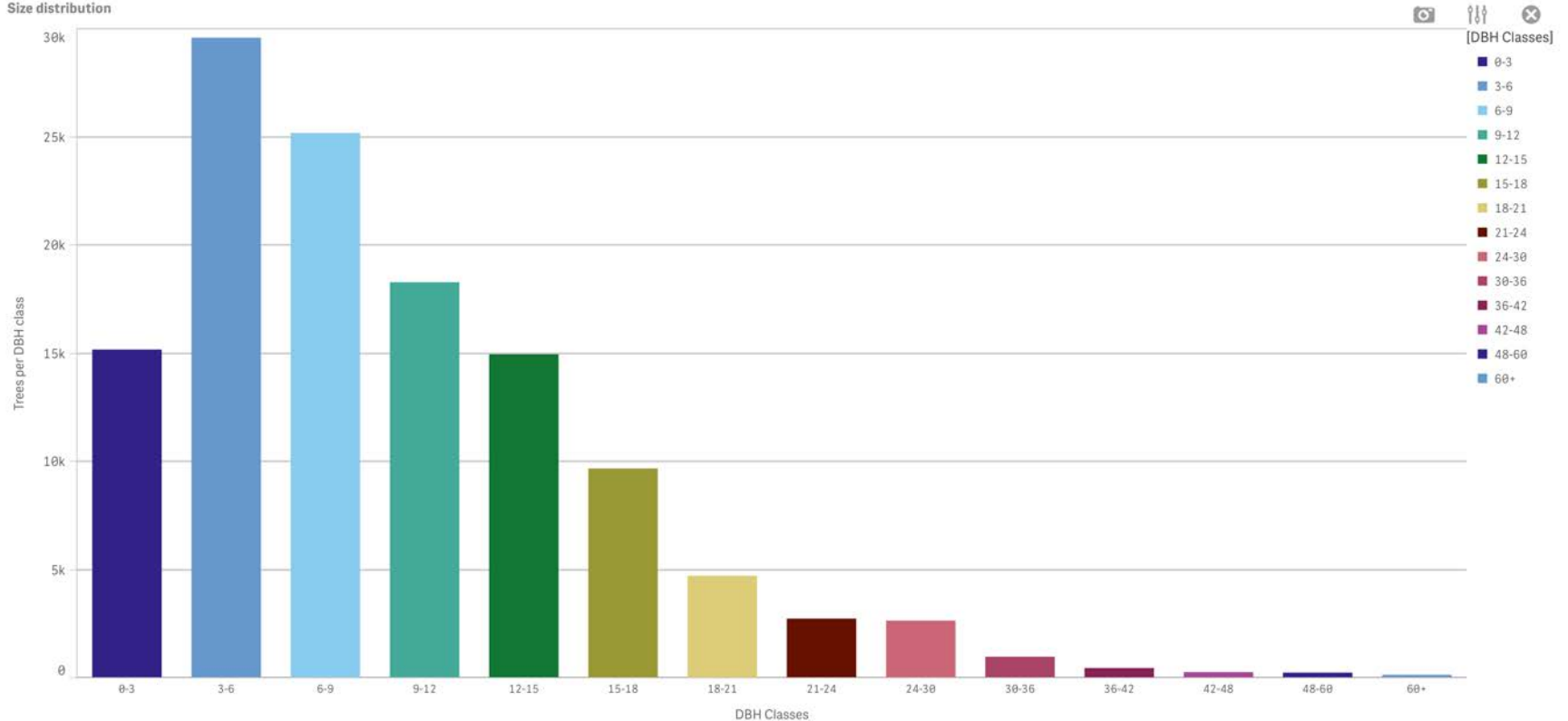
Size (age) distribution



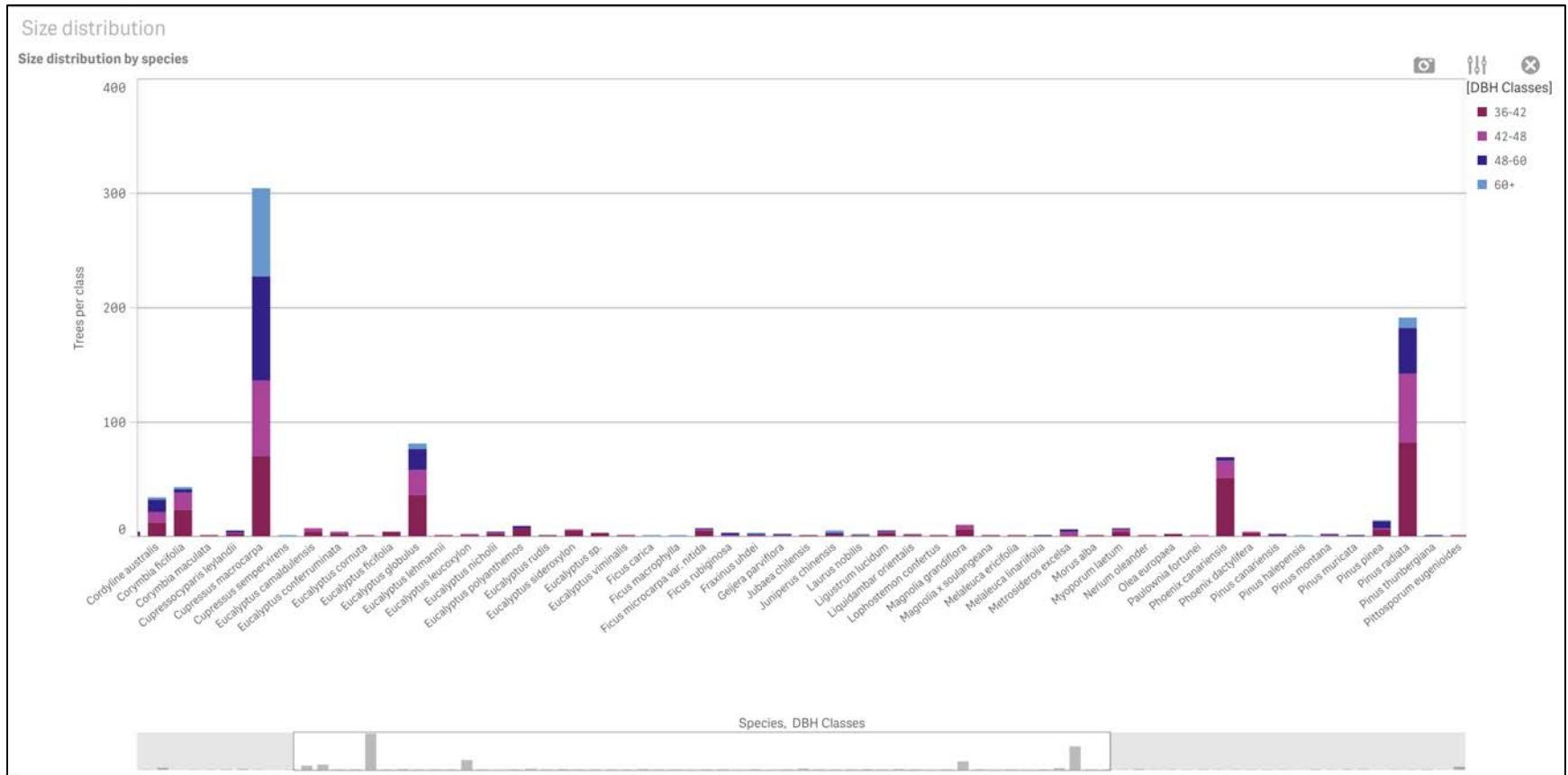
Age distribution, citywide

Size distribution

Size distribution



Big trees, DBH > 36 inches



Sunset Blvd at Kirkham



Sunset Blvd at Kirkham



Cupressus macrocarpa, Sunset Blvd.



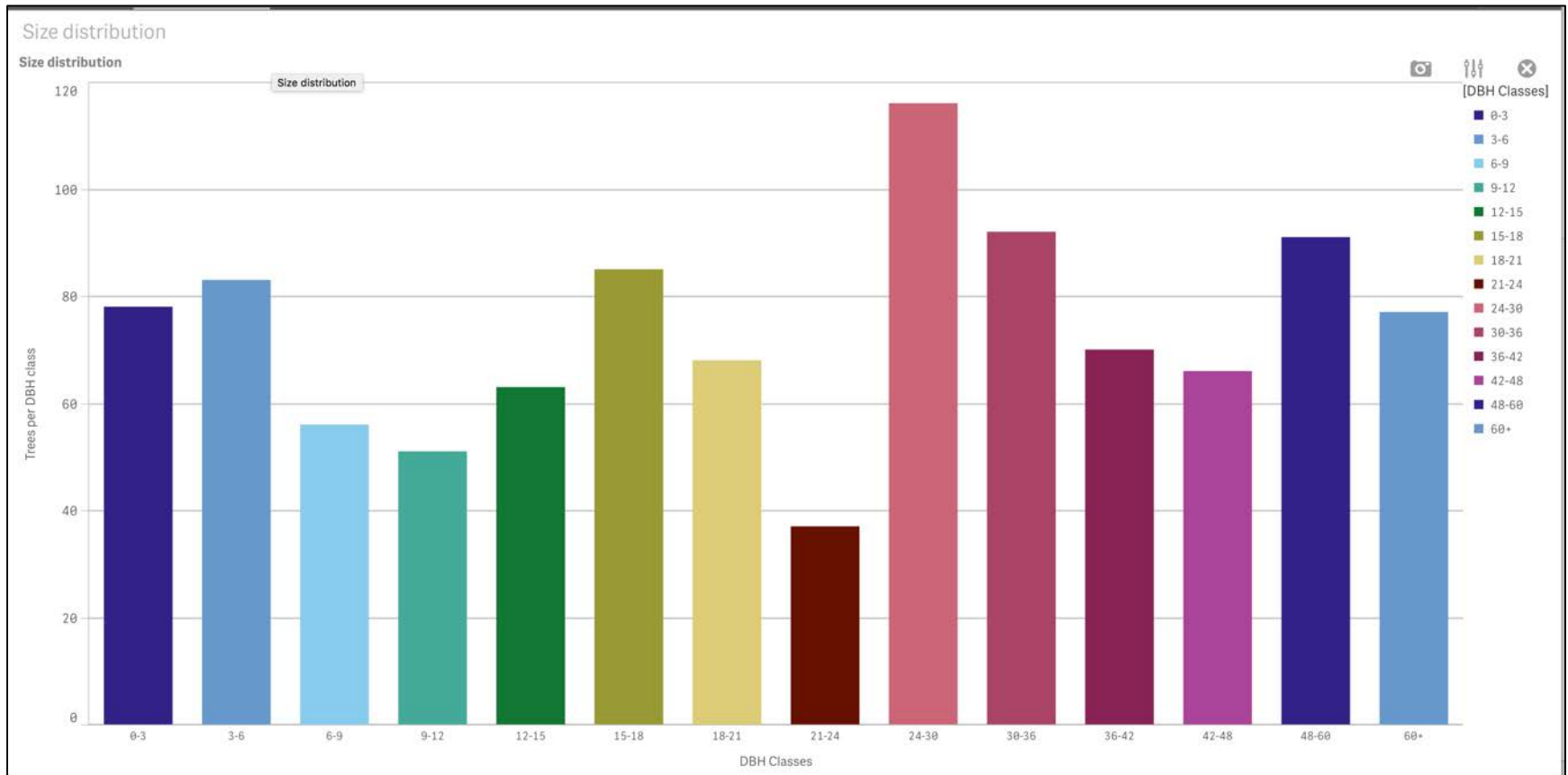
Cupressus macrocarpa, San Jose Ave



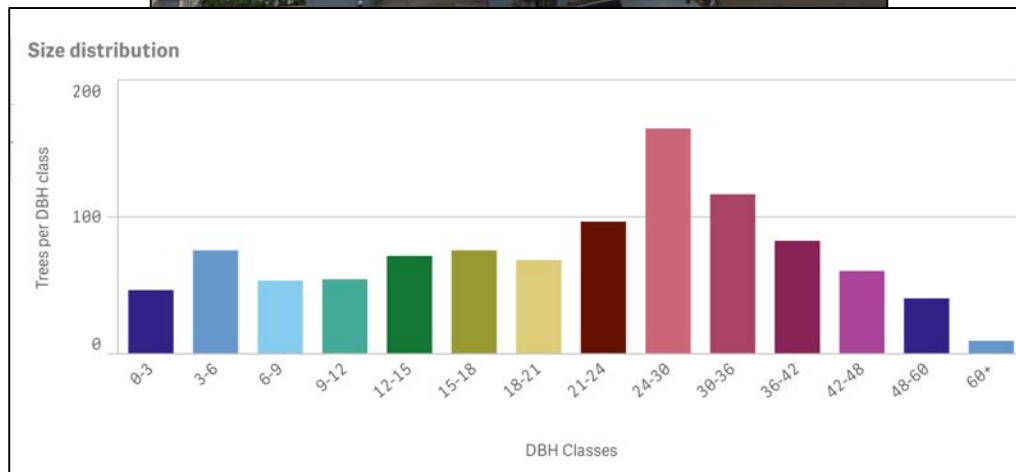
Monterey cypress, Potrero Hill



Age distribution, Monterey cypress



Pinus radiata

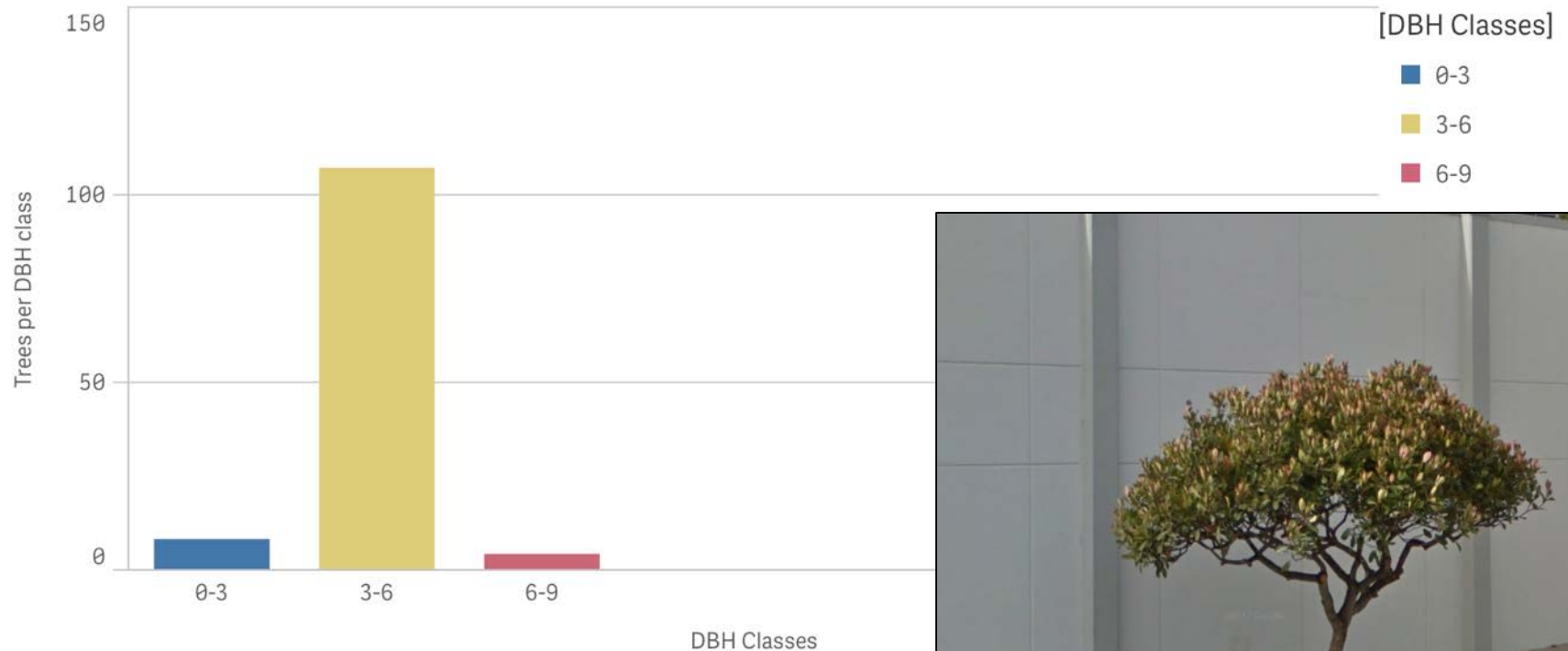


Age distribution, Indian hawthorne

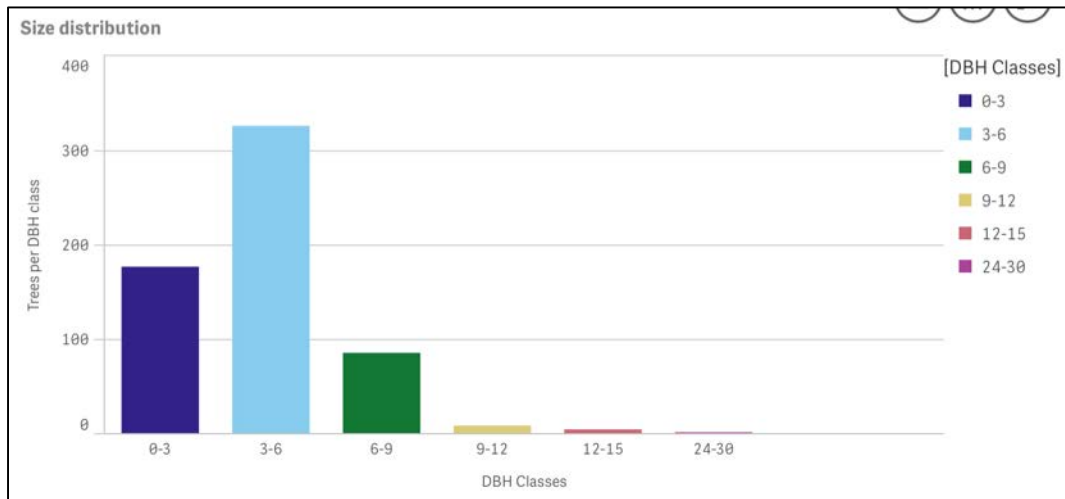
Species, DBH Classes



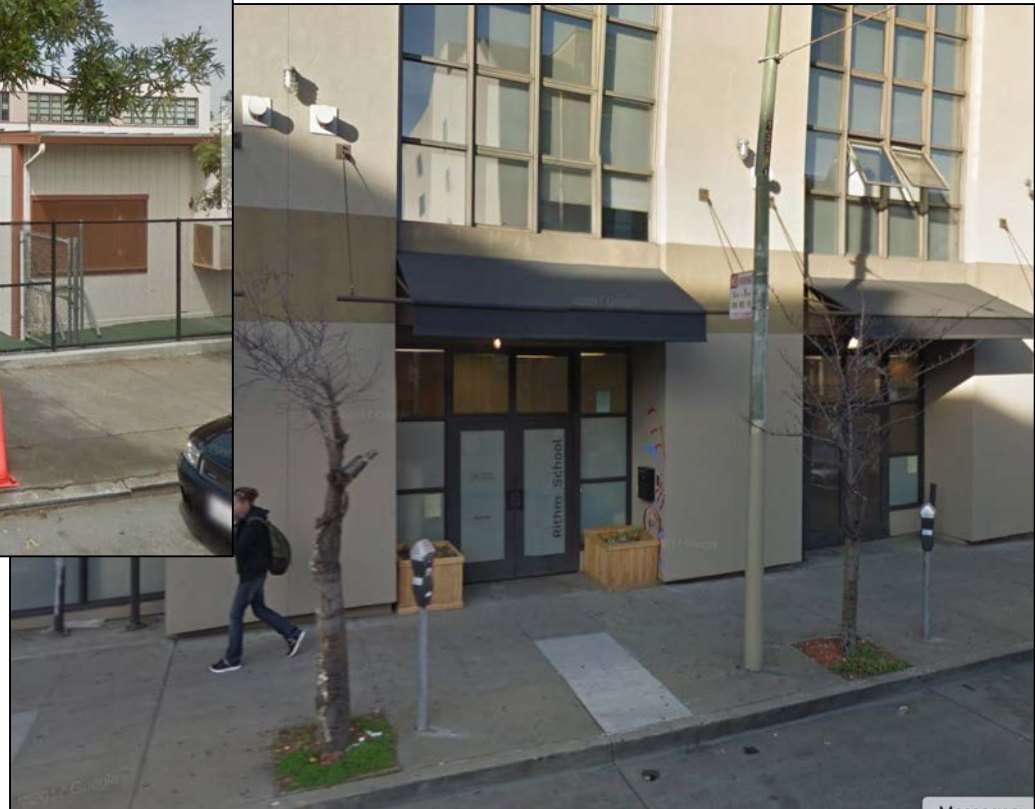
Size distribution



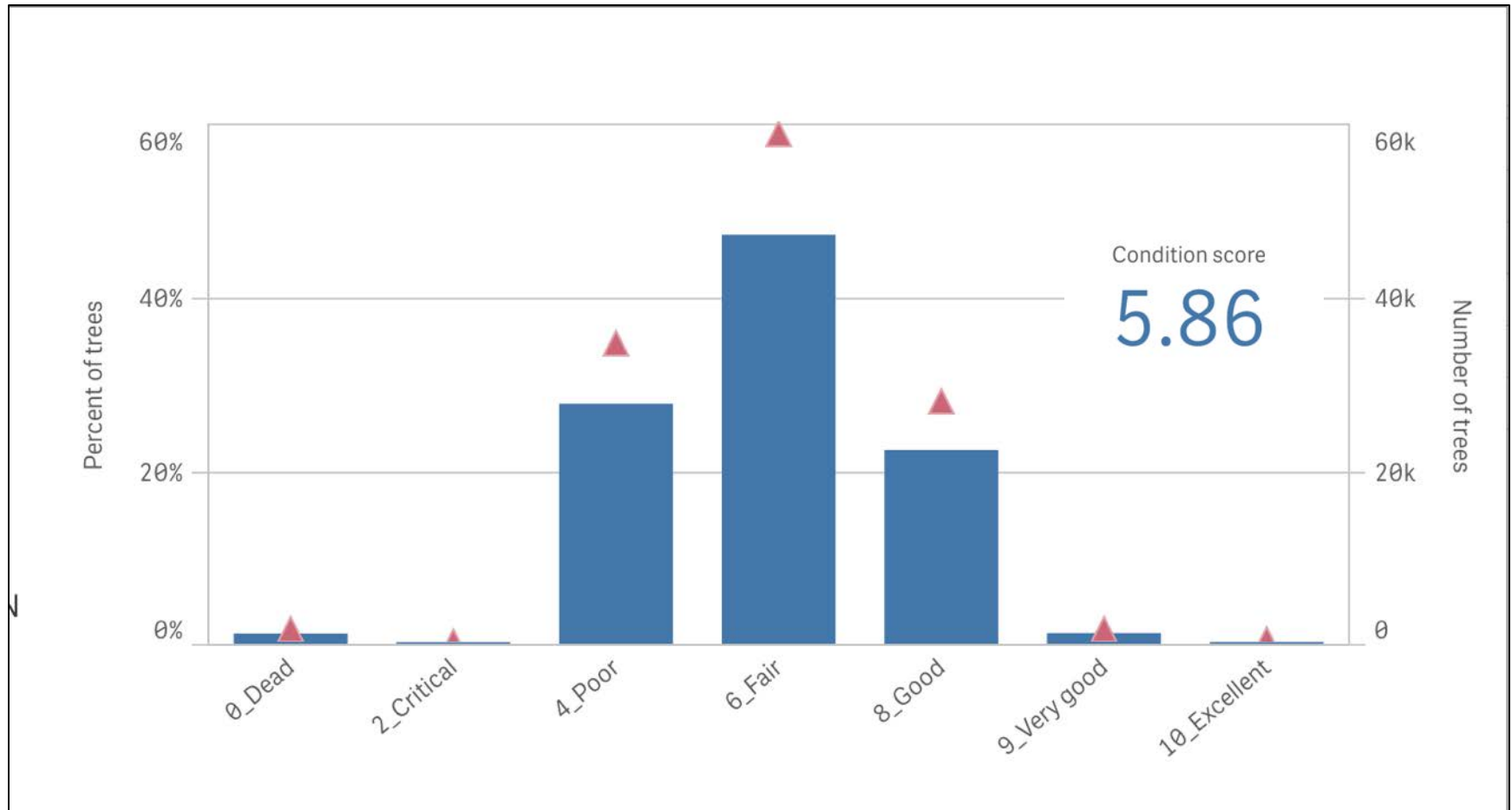
Age distribution, red maple



Condition



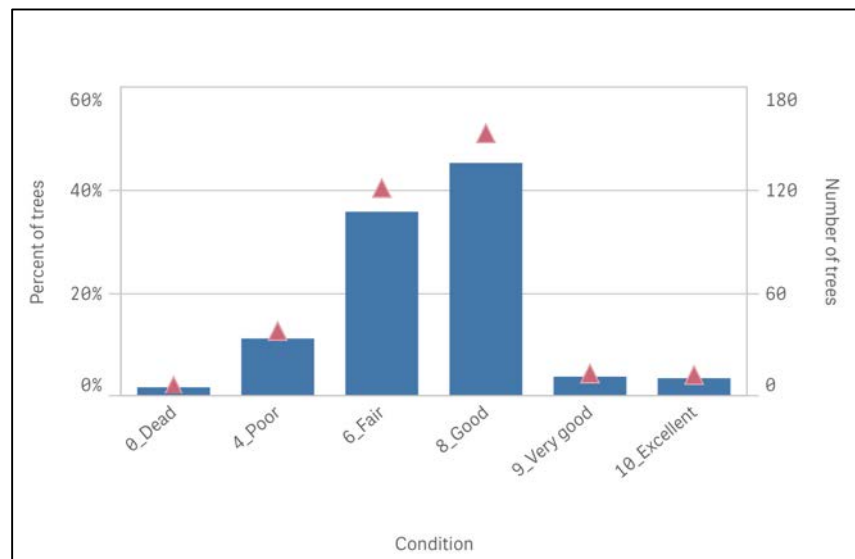
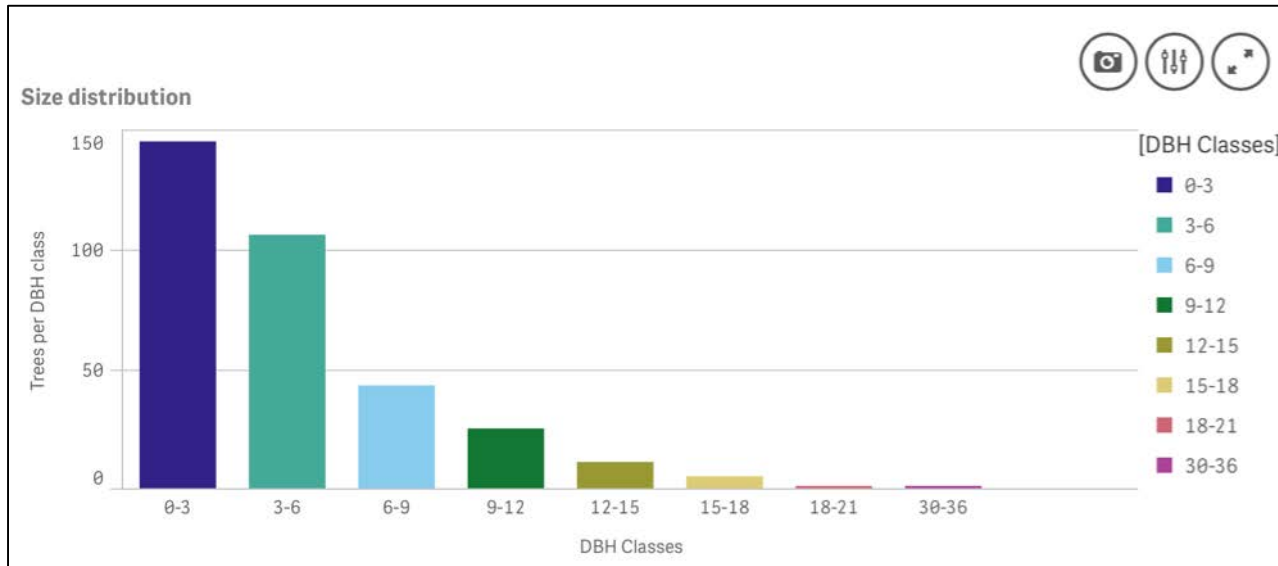
Condition



Lyonothamnus floribundus



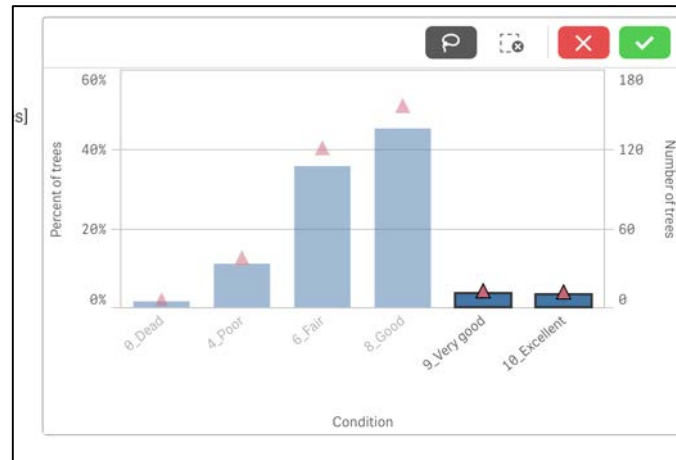
Lyonothamnus floribundus



Condition score

6.83

Lyonothamnus floribundus

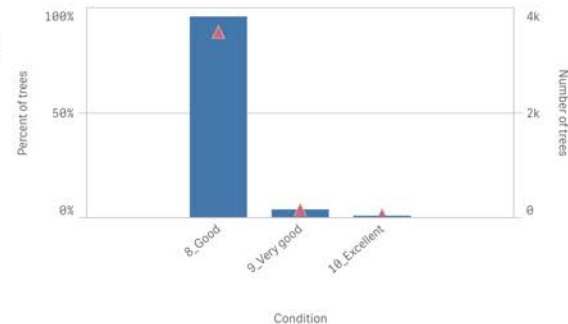
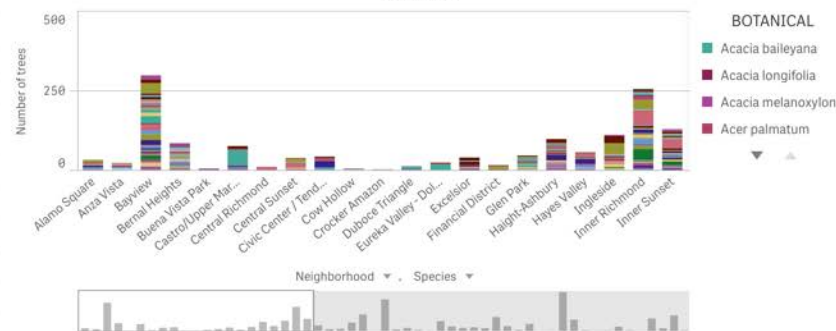
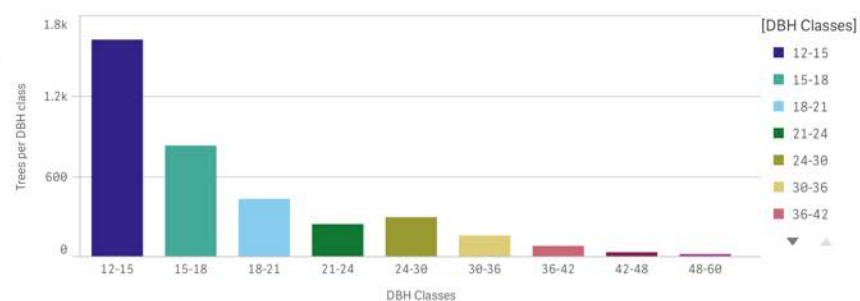


Big trees in good shape

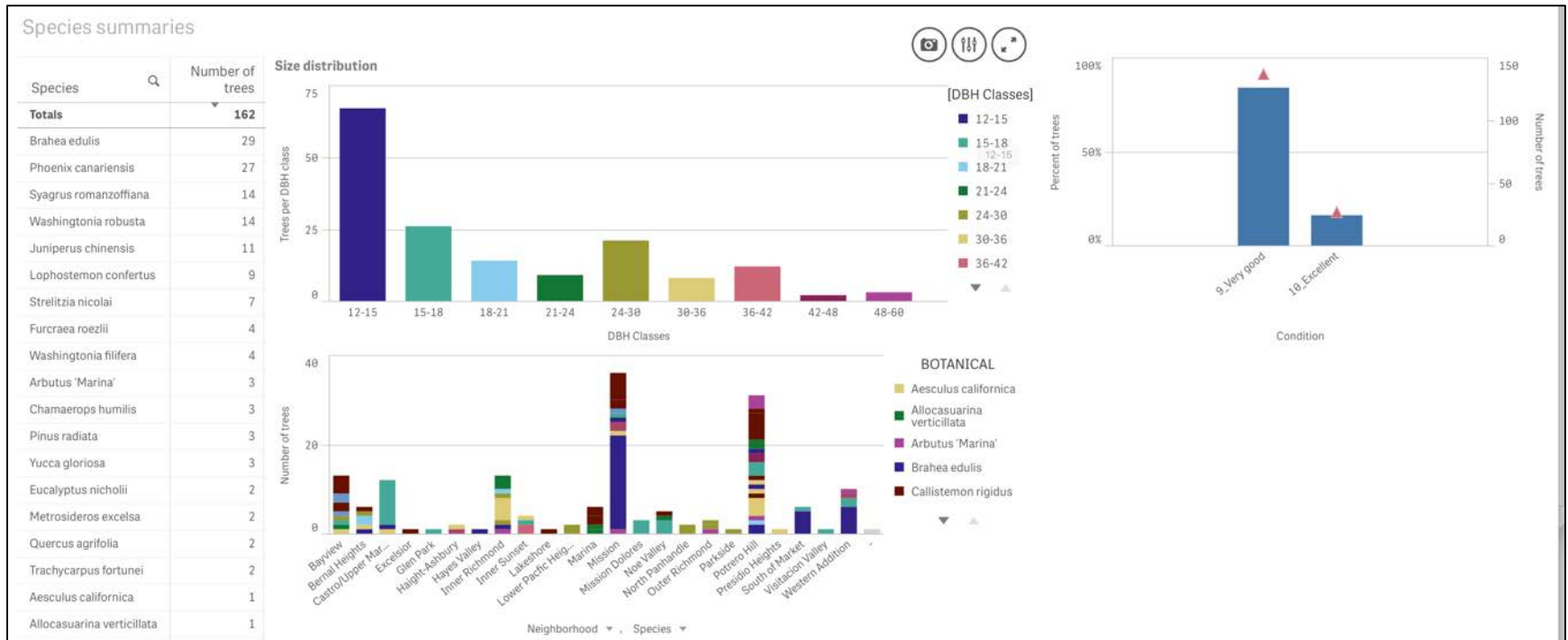
Species summaries

Species	Number of trees
Totals	3684
<i>Metrosideros excelsa</i>	314
<i>Washingtonia robusta</i>	294
<i>Phoenix canariensis</i>	221
<i>Lophostemon confertus</i>	215
<i>Pittosporum undulatum</i>	178
<i>Corymbia ficifolia</i>	133
<i>Ficus microcarpa</i> var. <i>nitida</i>	127
<i>Syagrus romanzoffiana</i>	115
<i>Magnolia grandiflora</i>	108
<i>Platanus x acerifolia</i>	107
<i>Yucca gloriosa</i>	96
<i>Juniperus chinensis</i>	95
<i>Washingtonia filifera</i>	92
<i>Cupressus macrocarpa</i>	87
<i>Eucalyptus ficifolia</i>	75
<i>Pinus radiata</i>	75
<i>Arbutus 'Marina'</i>	64
<i>Callistemon citrinus</i>	57
<i>Brahea edulis</i>	51
<i>Schinus terebinthifolius</i>	43
<i>Ulmus parvifolia</i>	40
<i>Maytenus boaria</i>	36
<i>Acacia melanoxylon</i>	34

Size distribution

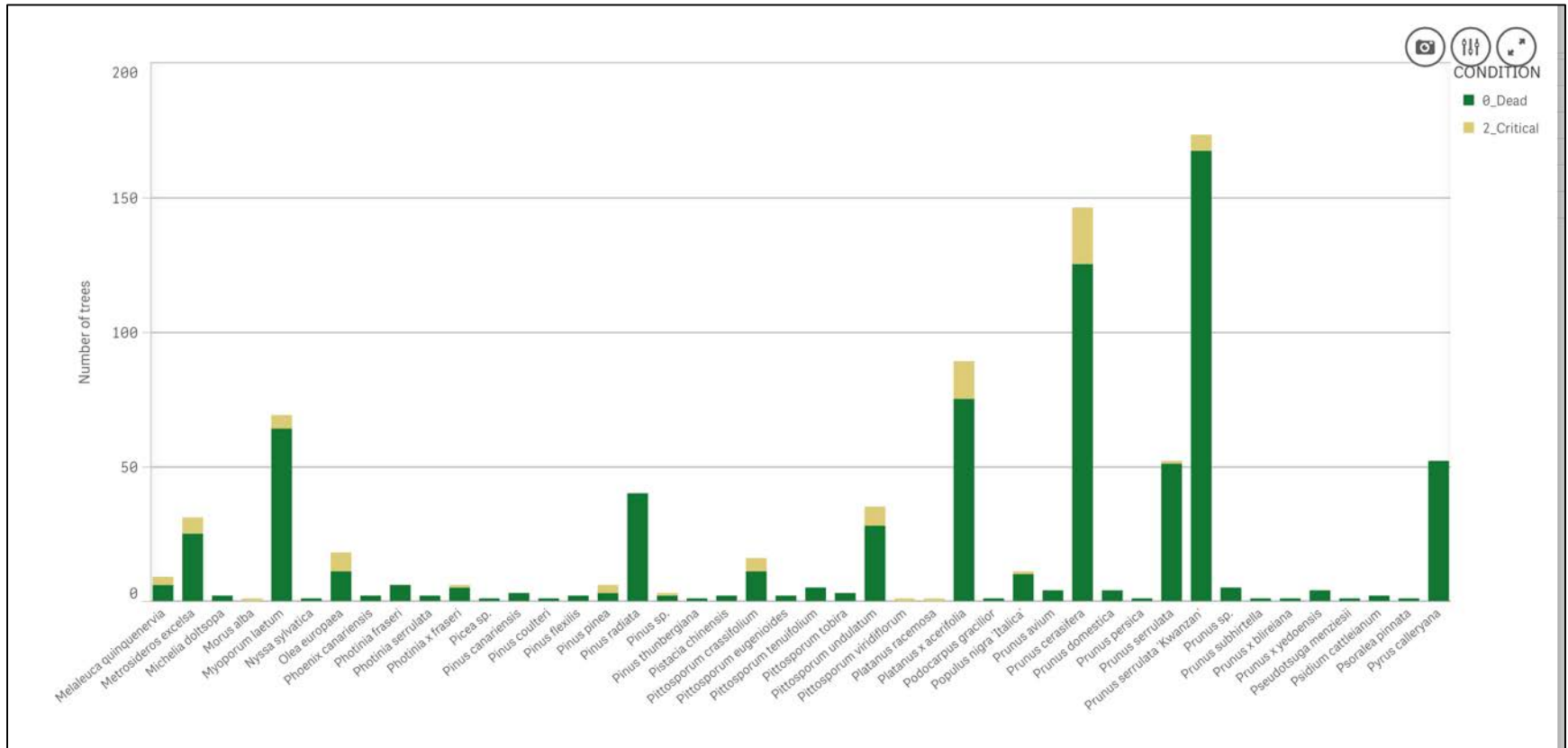


Big trees in really good shape



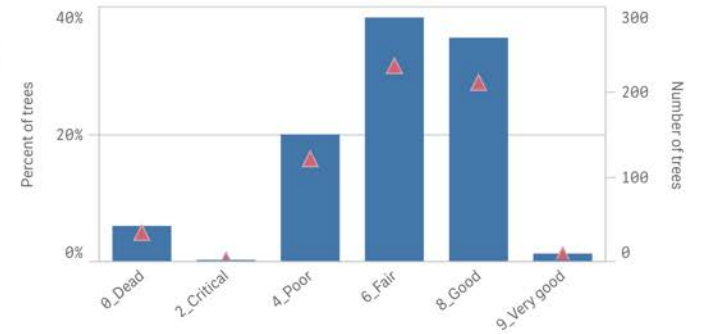
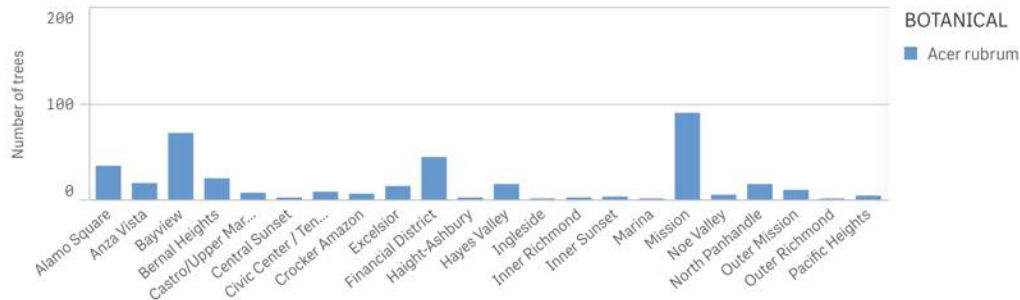
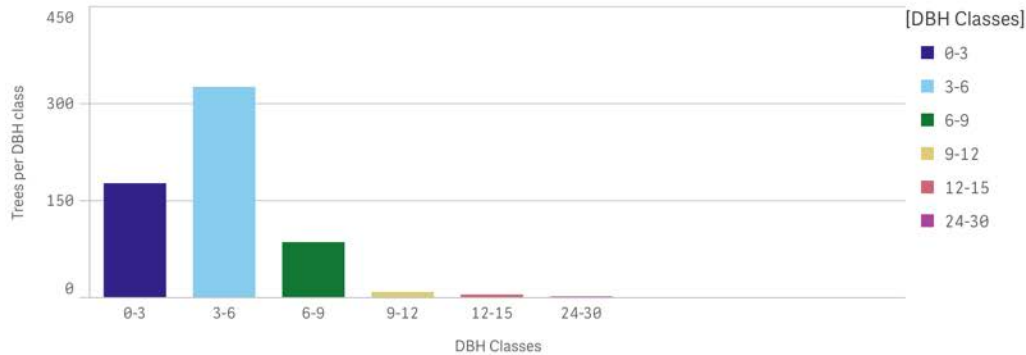
= palms

Trees in bad shape



Acer rubrum

Size distribution

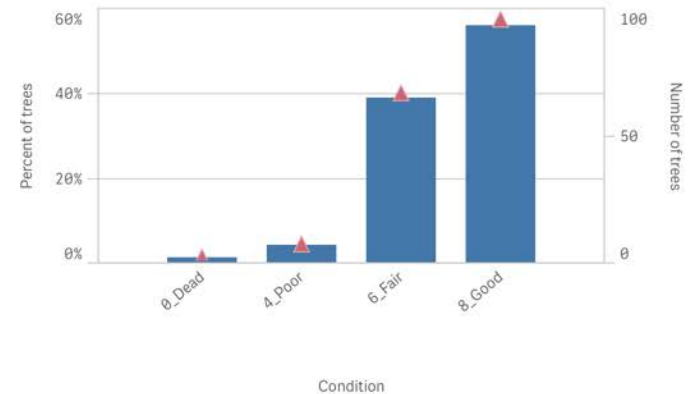
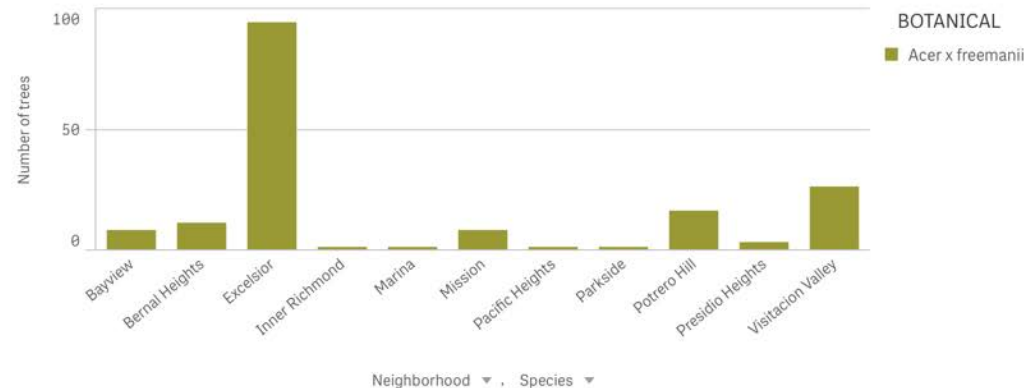
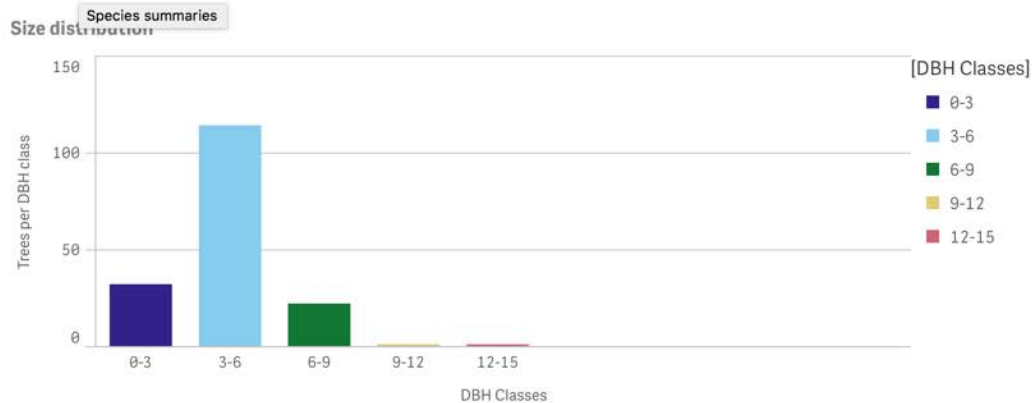


Condition

Condition score

6

Acer x freemanii



Condition score

6.96

Native species



Native species

Native trees

Number of species

16

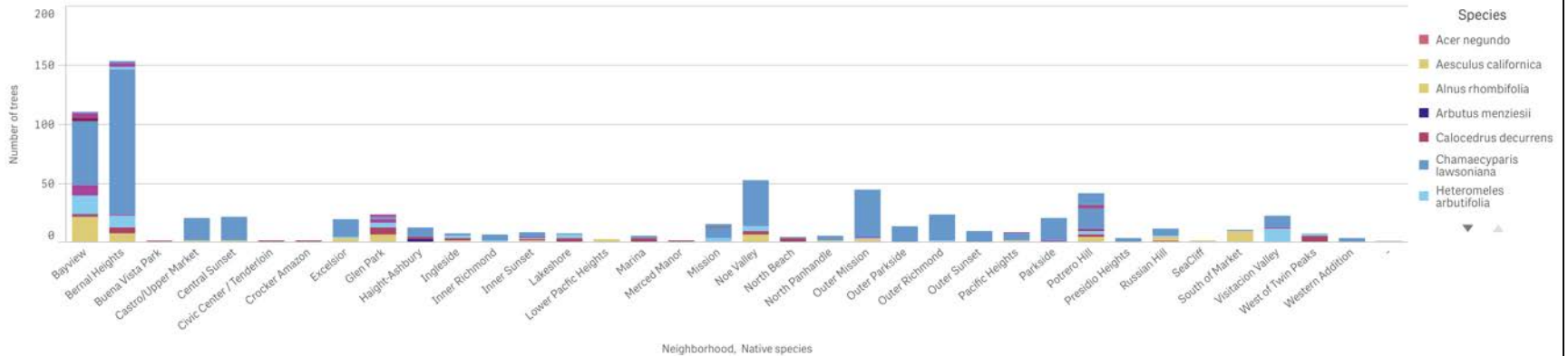
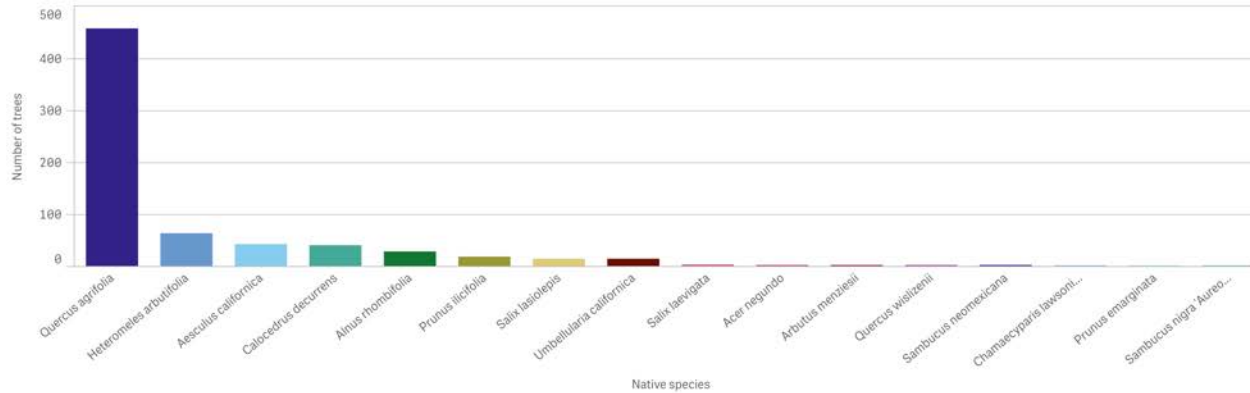
Number of trees

689

Q Native to SF

Yes ☒

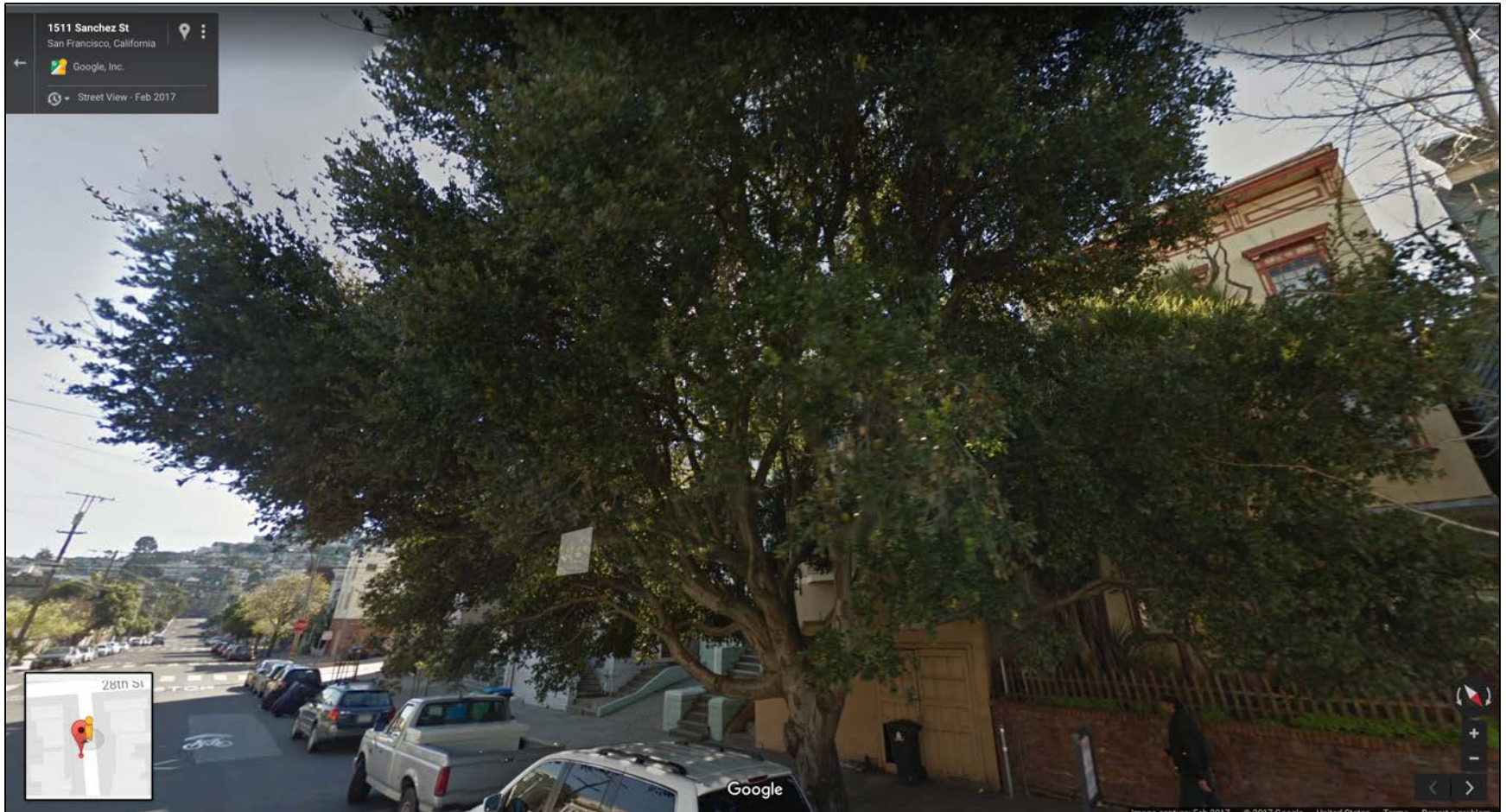
No ☐



Quercus agrifolia



Quercus agrifolia



Quercus agrifolia, 48th Ave.



Heteromeles arbutifolia



Aesculus californica



Aesculus californica



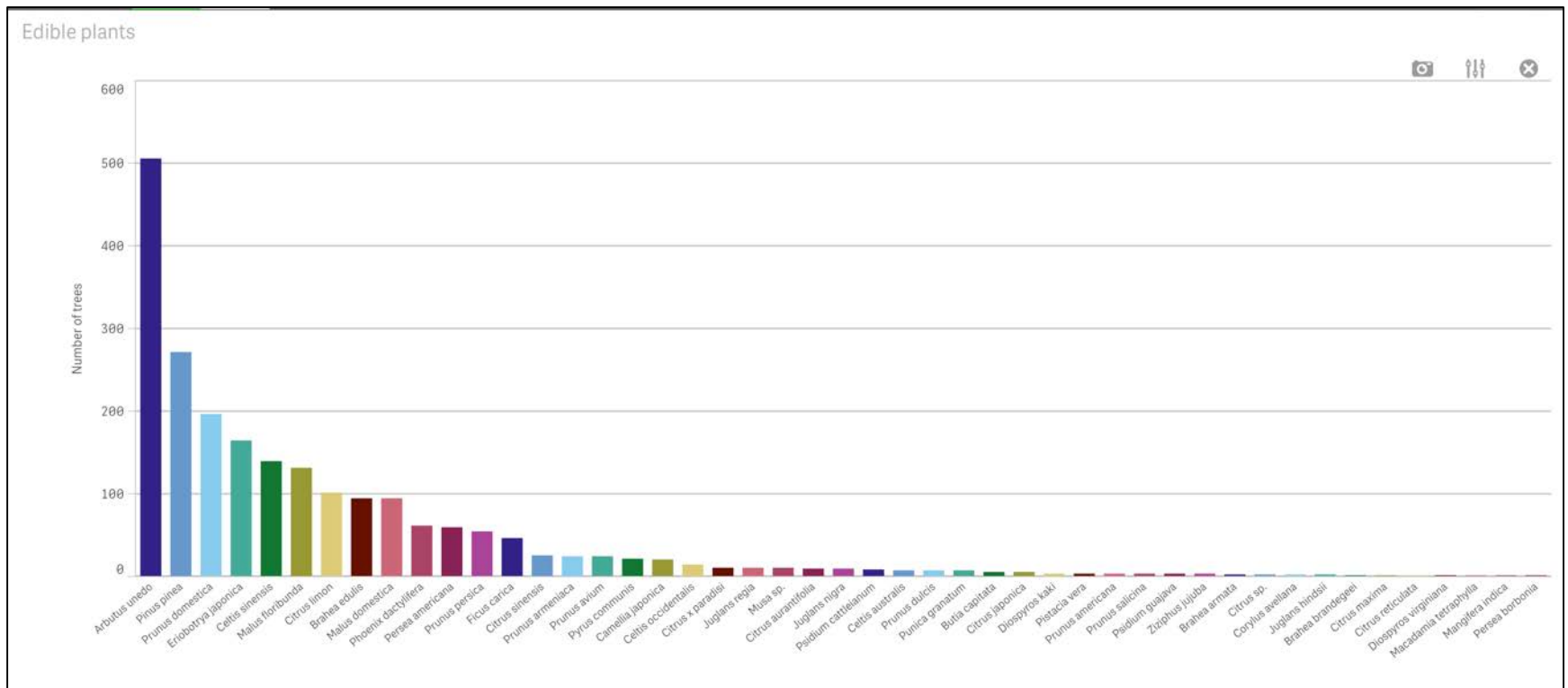
Stuff to eat

Number of species

47

Number of trees

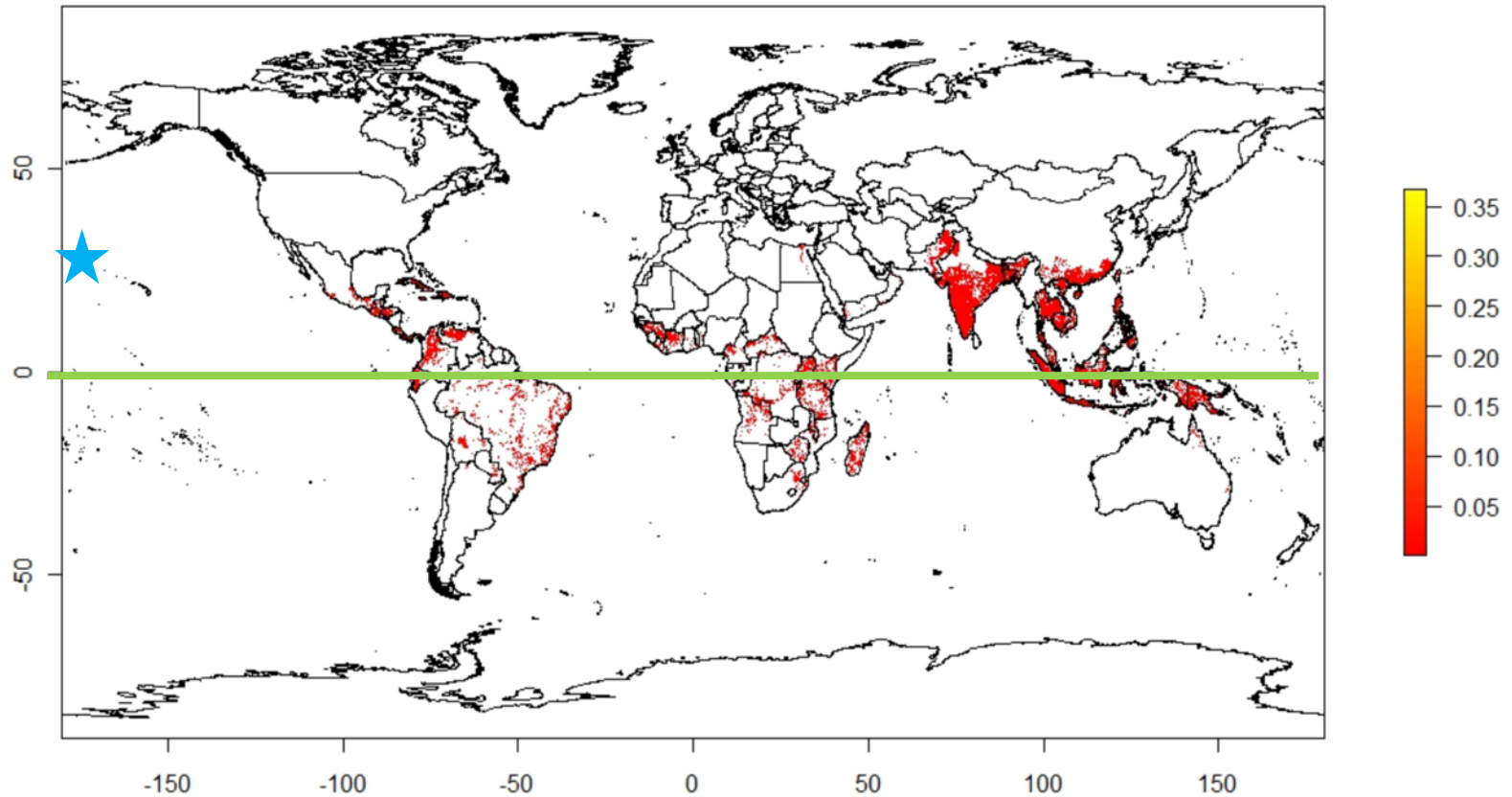
2,163



Musa sp. (banana)

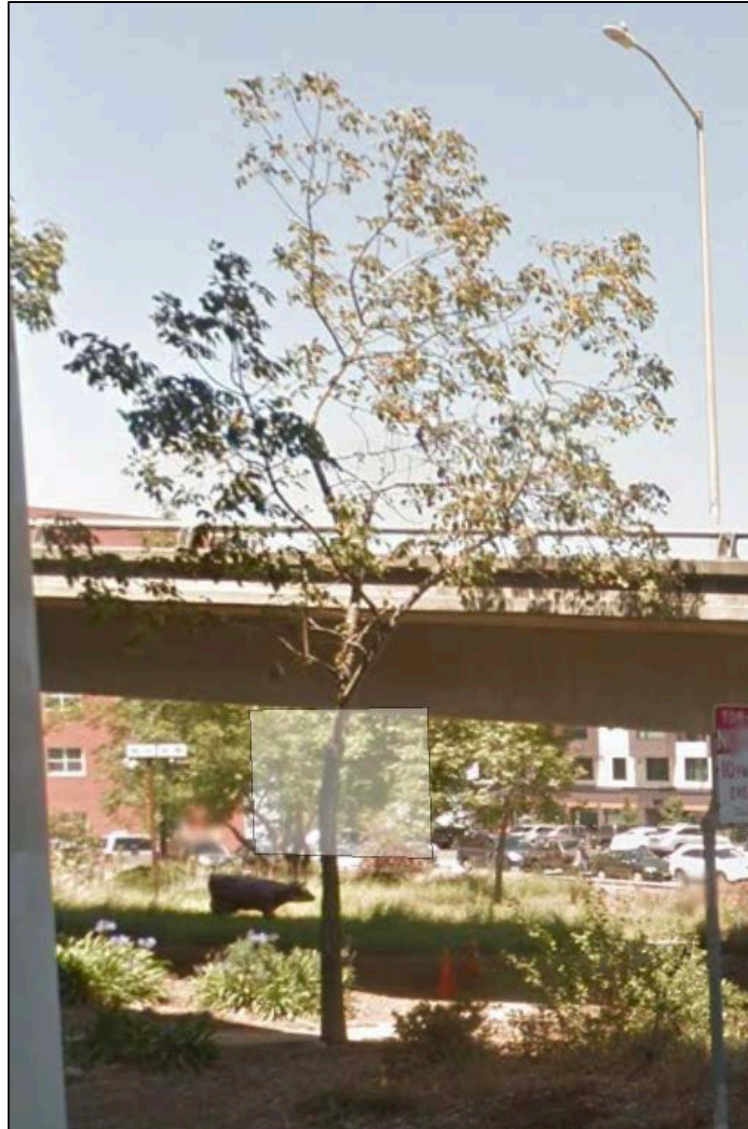


Banana range



“Banana plants thrive in tropical regions where the average temperature is 80° F (27° C) and the yearly rainfall is between 78 and 98 inches.” —BananaLink, a nonprofit cooperative

Mangifera indica



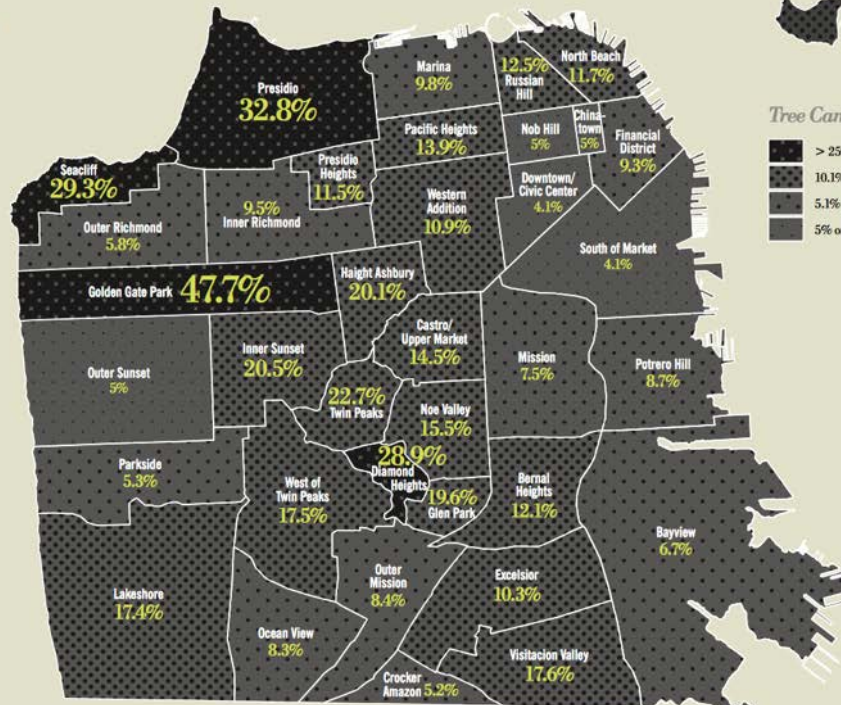
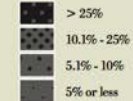
Bayview

TREE CANOPY COVERAGE BY NEIGHBORHOOD

San Francisco's canopy coverage is among the lowest of any large city in the United States. The city's canopy cover varies widely between neighborhoods with some traditionally underrepresented communities having less greenery. The table and map below display the distribution of trees across San Francisco.¹



Tree Canopy

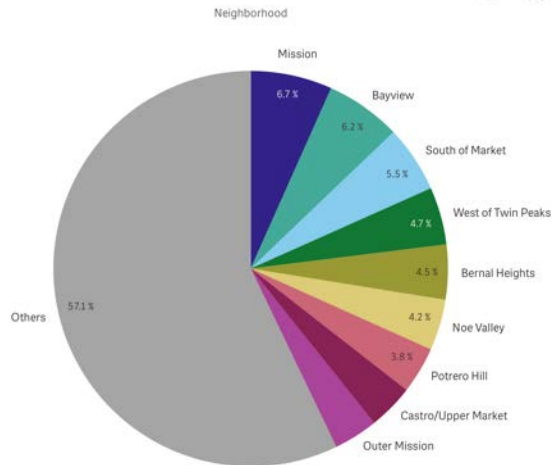


¹ Canopy analysis relies on technology and photos that may be affected by urban conditions such as the presence of buildings blocking some trees.

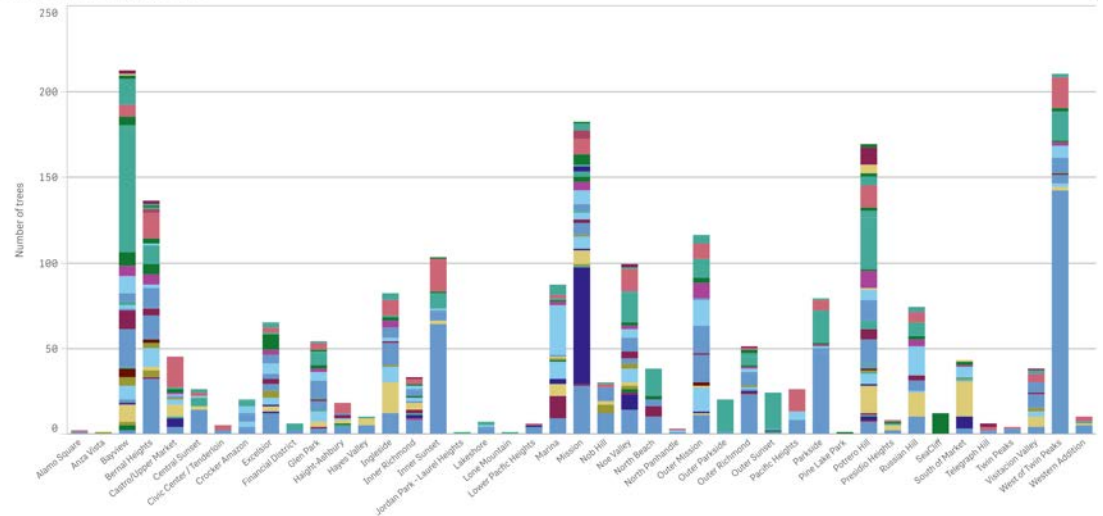
Source: SF Planning Department (2012)

Bayview

Percent trees by neighborhood



Number of edible trees by neighborhood



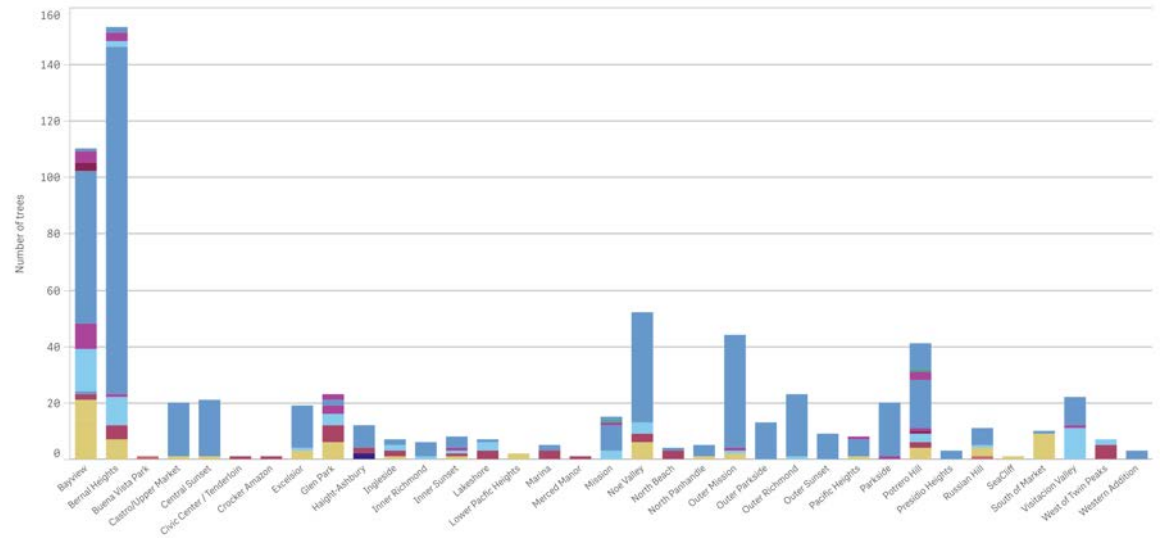
Condition score

6.24

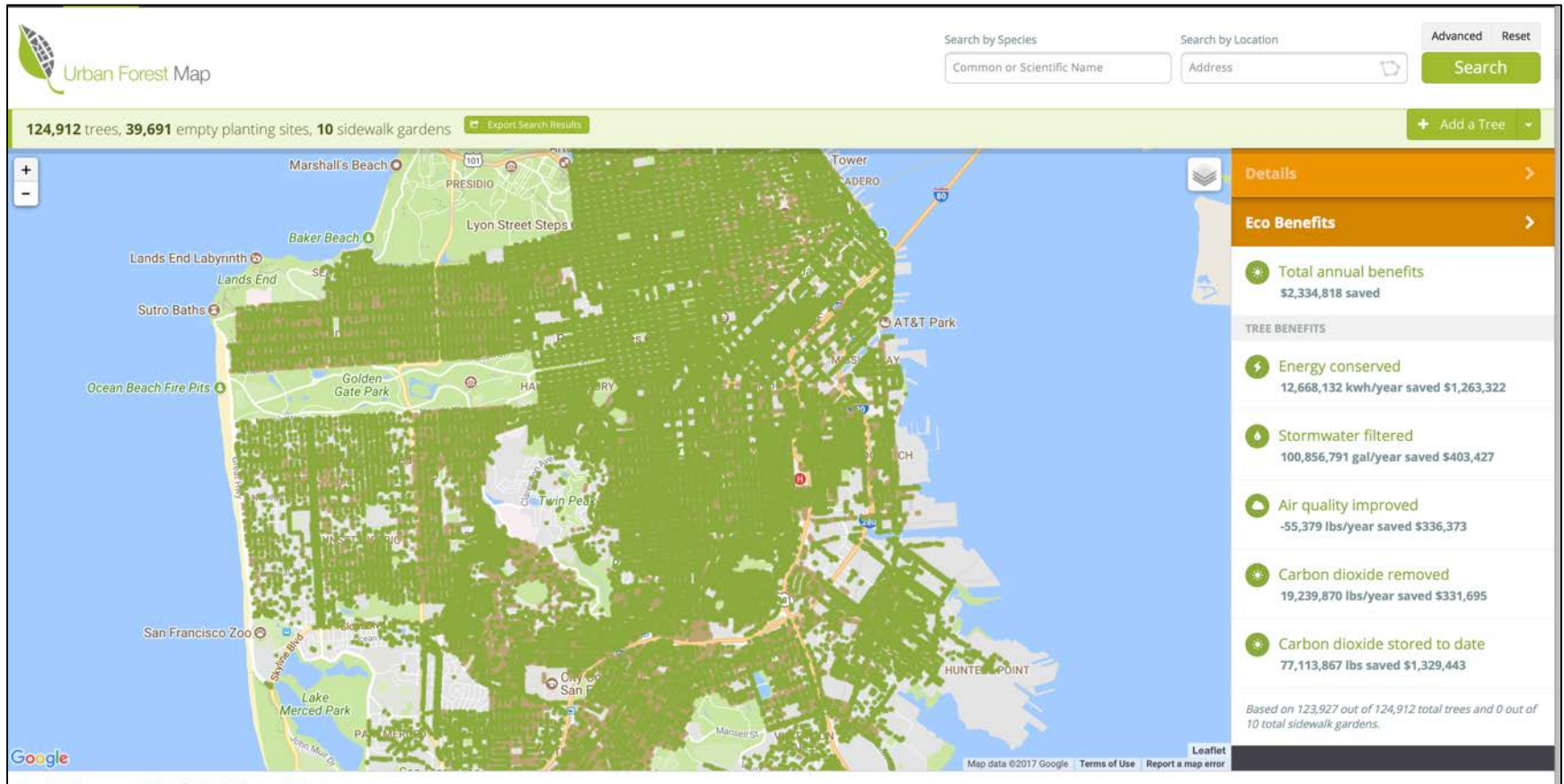
Condition



Native trees by neighborhood



San Francisco Urban Forest Map

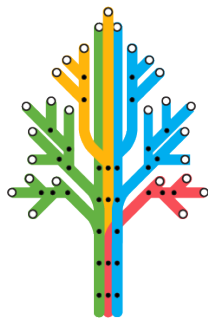


<https://www.opentreemap.org/urbanforestmap/map>
<https://urbanforestmap.org>

Questions?



kelaine@urban-ecos.com



Urban Ecos

“Chance rules our lives, and the future is all unknown.
Best live as we may, from day to day.” --Sophocles

