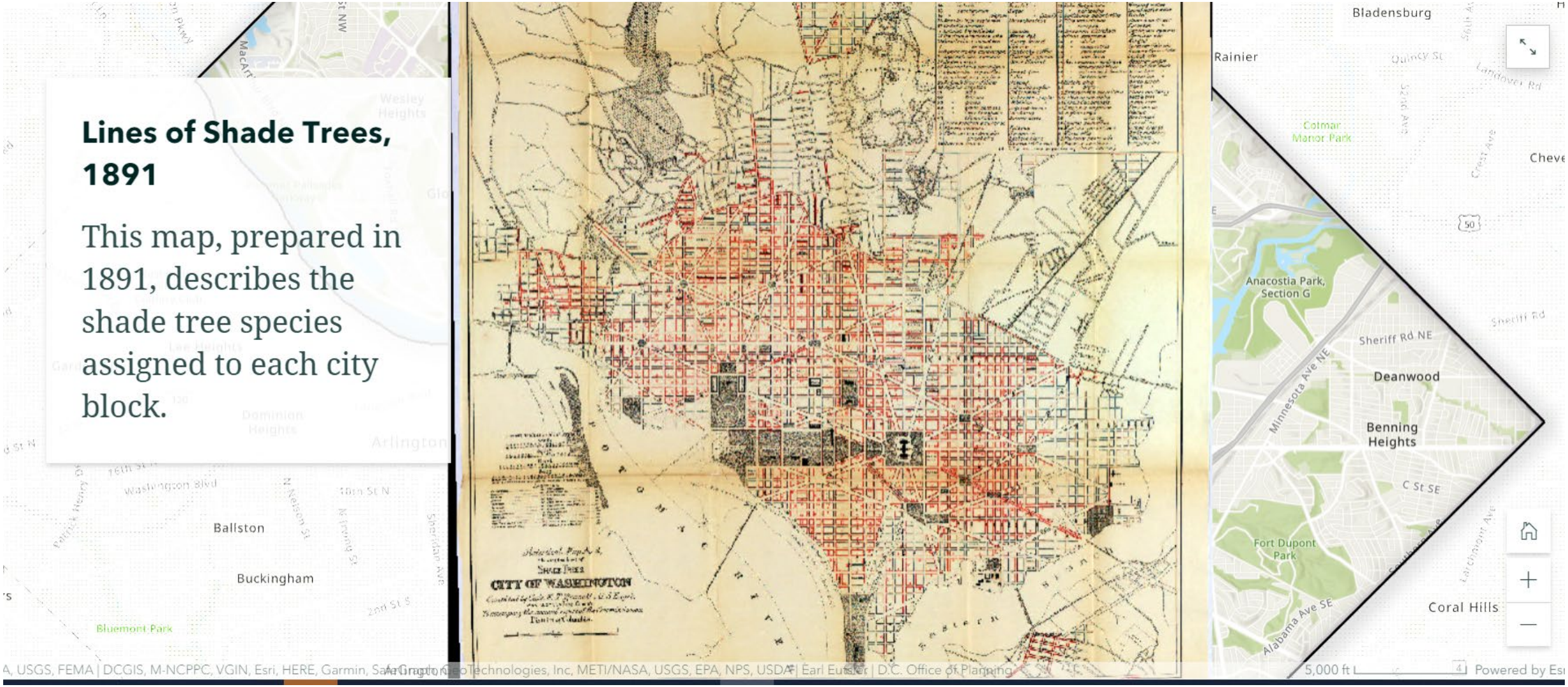
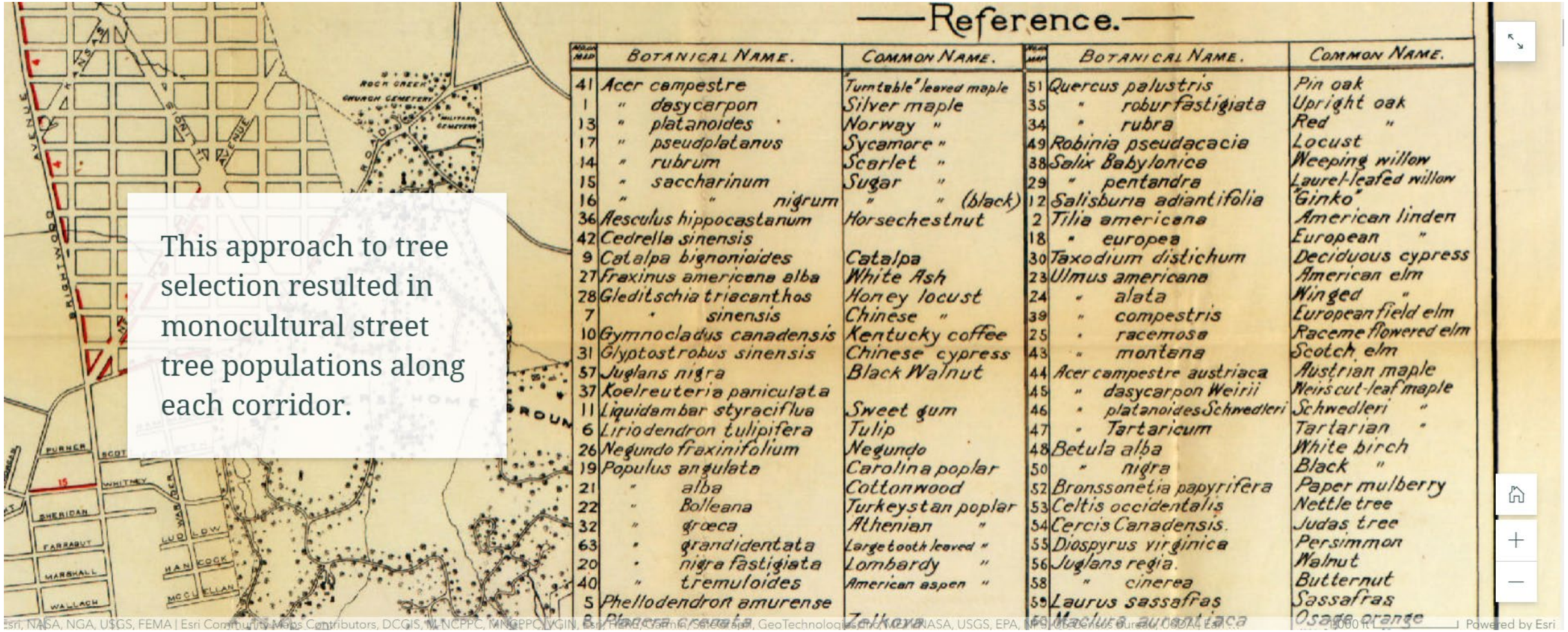
Strategies and Tools Managing the Urban Forest: Washington, DC

Urban Forestry Division
District Department of Transportation
September 13, 2023

Historical Approach to Street Tree Species Selection

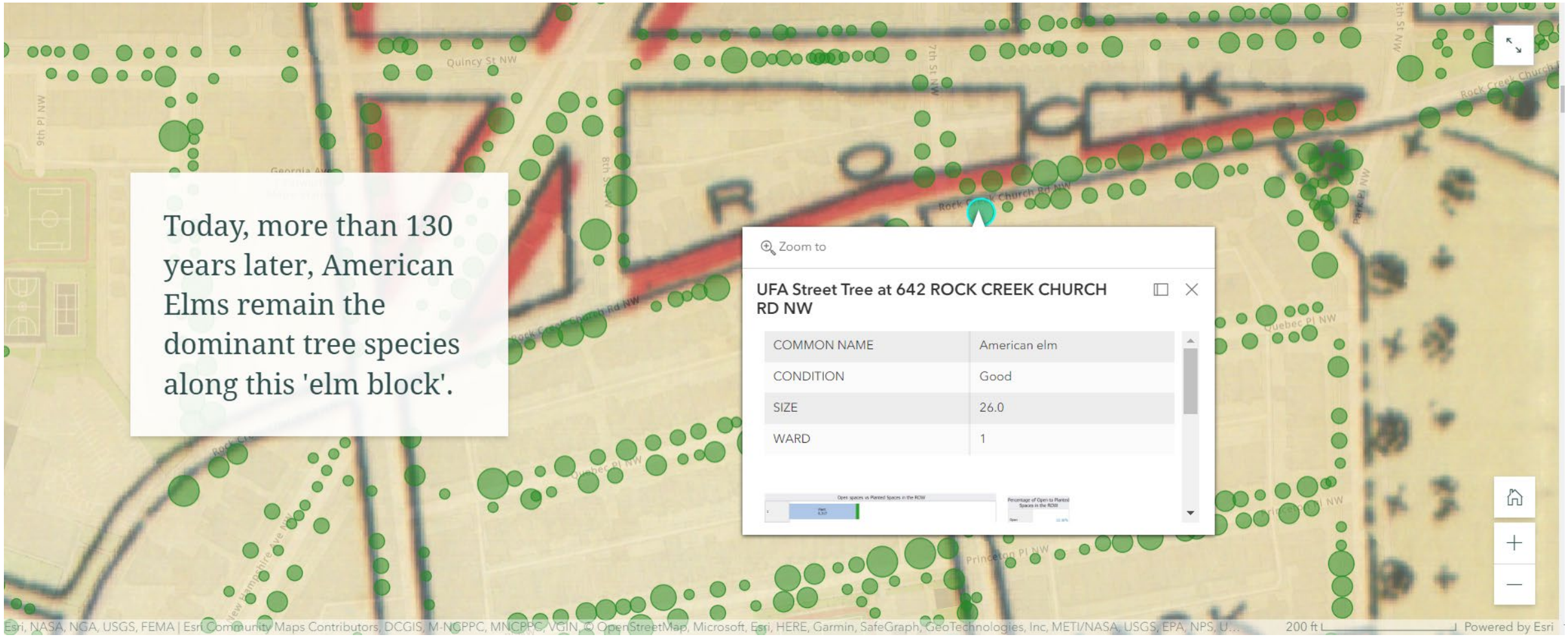


Problematic Corridors of Homogeneity



This approach to tree selection resulted in monocultural street tree populations along each corridor.

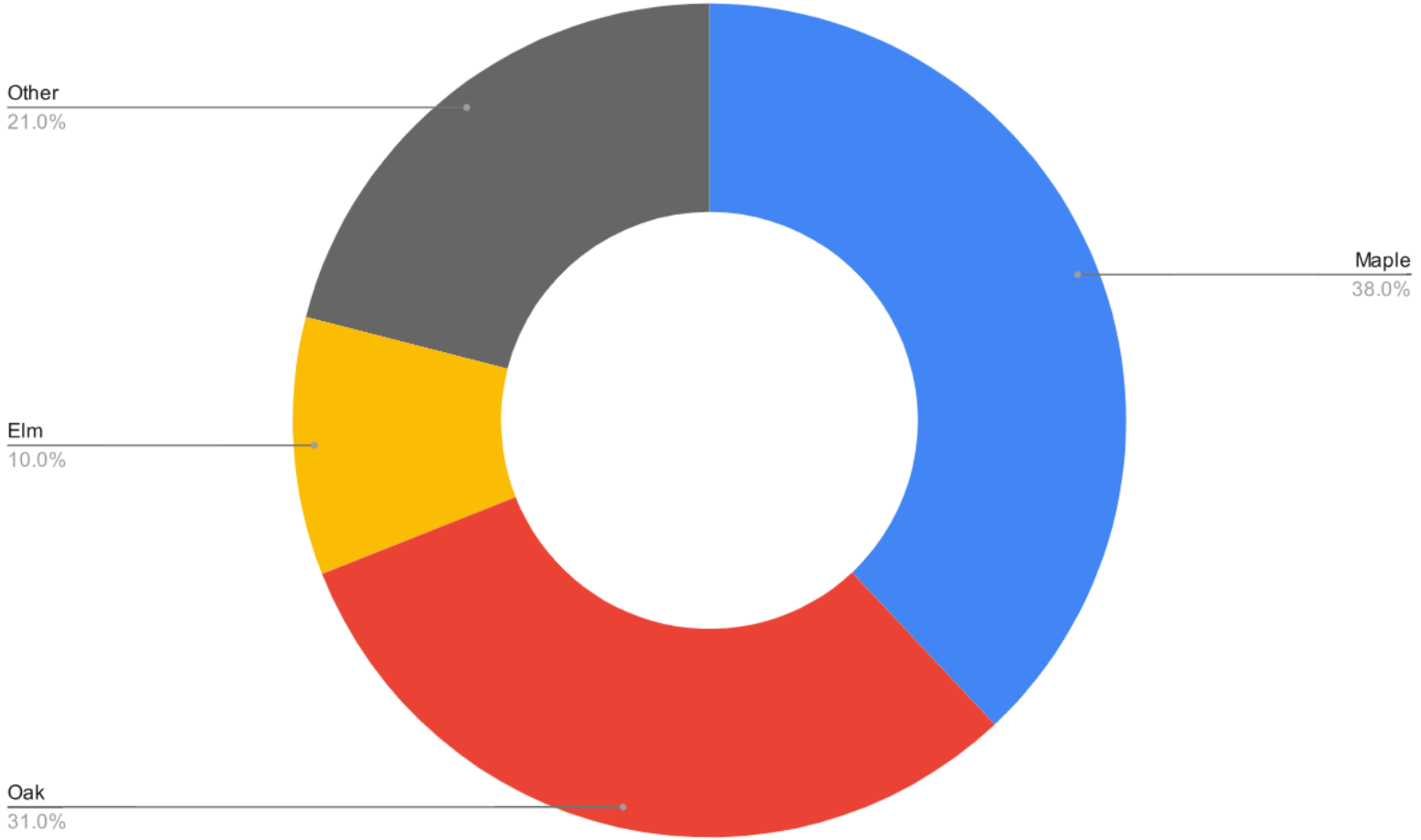
Enduring Legacy



What We Have Inherited

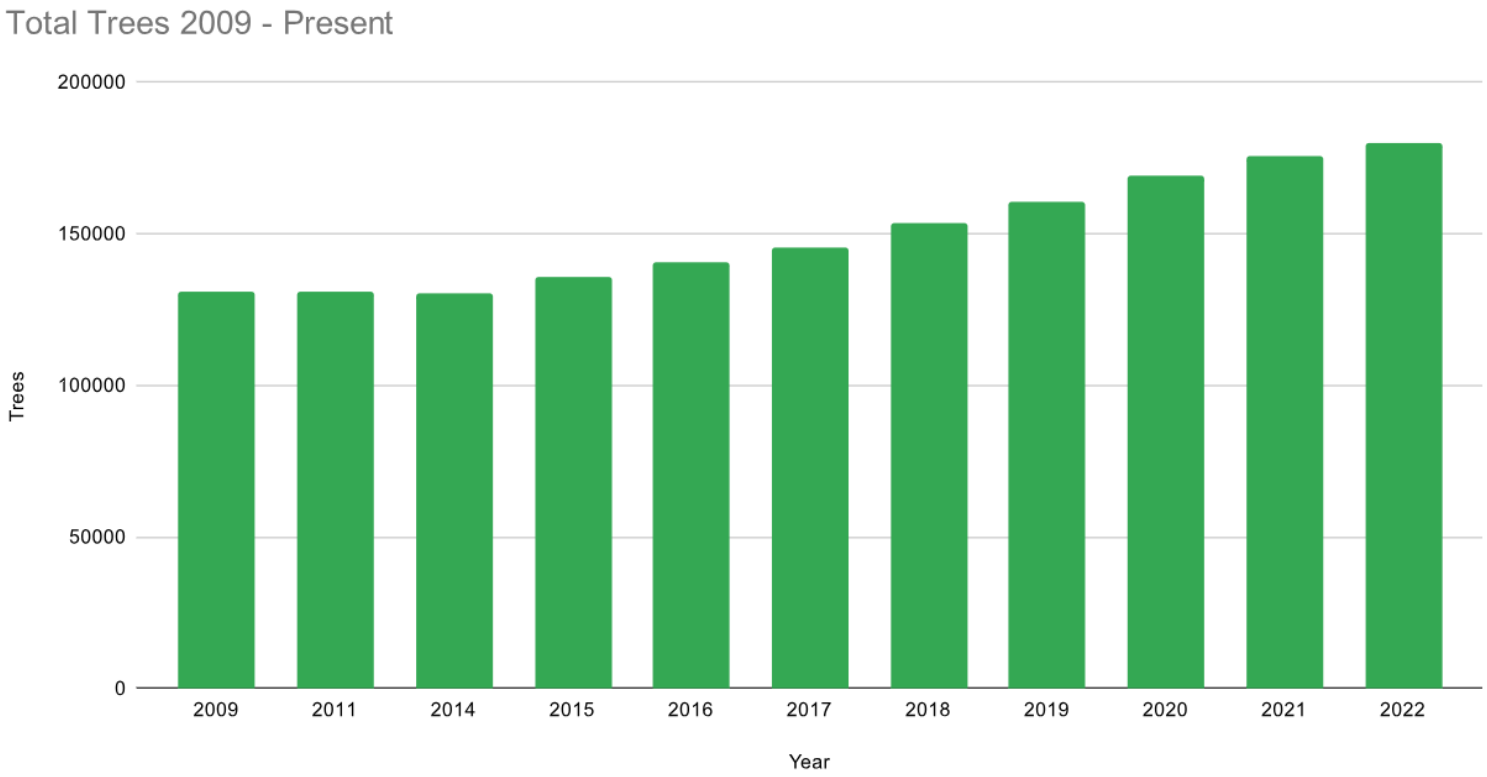
In 2009, 8 of every 10 public trees were Maples, Oaks, or Elms.

There were nearly 2 Maples for every tree that was of a species other than these dominant three.



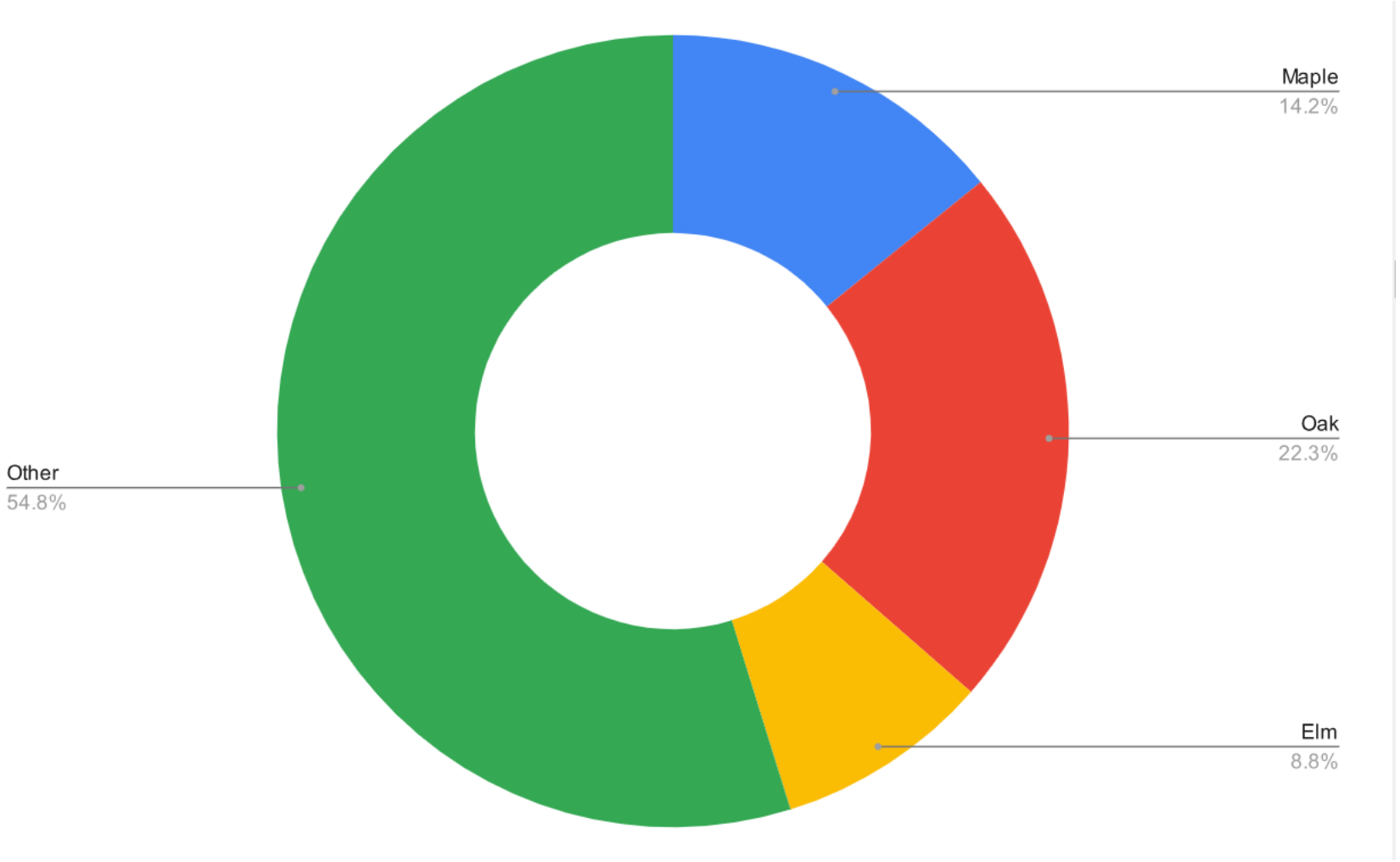
Planting the Future Urban Forest

By aggressively pursuing full stocking on our public lands, DC installed between 6,000 - 8,000 new plantings per year since 2009.



Changing Composition

By instituting a few basic rules, based on the composition we inherited, we have managed to dramatically diversify the public forest.



Managing for Resilience and Adaptability

Urban Forestry Division tree planting priorities, 2021

Promote this species in new plantings.	Maintain current levels of planting for this species.	Reduce planting selections of this species.
Acer barbatum	*Acer buergerianum*	*Acer ginnala*
Acer negundo	*Acer campestre*	*Acer griseum*
Amelanchier laevis	*Acer rubrum*	*Acer saccharinum*
*Carya illinoinensis**	*Aesculus hippocastanum*	*Acer saccharum*
Celtis laevigata	*Betula nigra**	*Aesculus pavia*
Celtis occidentalis	*Carpinus betulus*	*Amelanchier canadensis**
Cladrastis lutea	*Carpinus caroliniana*	*Carya aquatica*
Eucommia ulmoides	*Cercidiphyllum japonicum*	*Carya texana*
Ginkgo biloba (male)	*Cercis canadensis*	*Cornus florida*
Gleditsia triacanthos var. inermis	*Cornus kousa**	*Crataegus phaenopyrum*
Gymnocladus dioicus	*Diospyros virginiana*	*Fagus grandifolia**
*Koelreuteria paniculata**	*Ilex opaca*	*Fraxinus pennsylvanica lanceolata*
Liquidambar rotundiloba	*Juniperus virginiana**	*Halesia carolina*
*Magnolia grandiflora**	*Liquidambar Stryaciflua 'Sterile'*	*Juglans nigra*
Magnolia virginiana	*Liquidambar styraciflua*	*Koelreuteria bipinnata*
Nyssa sylvatica	*Liriodendron tulipifera**	*Magnolia acuminata*
Ostrya virginiana	*Maackia amurensis*	*Oxydendrum arboreum*
Parrotia persica	*Maclura pomifera**	*Paulownia tomentosa*
*Platanus occidentalis**	*Magnolia x soulangeana**	*Phellodendron amurense*
Quercus bicolor	*Metasequoia glyptostroboides*	*Picea abies*
Quercus falcata	*Nyssa aquatica*	*Pinus elliottii*
Quercus lyrata	*Nyssa biflora**	*Pinus palustris**
Quercus muehlenbergii	*Pinus taeda**	*Pinus strobus*
Quercus nigra	*Platanus x acerifolia*	*Planera aquatica*
Quercus pagoda	*Prunus Okame*	*Prunus cerasifera*
Quercus phellos	*Prunus yedoensis*	*Prunus serrulata 'Kwanzan'*
*Quercus shumardi**	*Quercus alba*	*Prunus virginiana*
*Taxodium ascendens**	*Quercus imbricaria*	*Pyrus calleryana 'Bradford'*
*Taxodium distichum**	*Quercus macrocarpa**	*Quercus acutissima**
Ulmus americana 'New Harmony'	*Quercus marilandica**	*Quercus coccinea**
Zelkova serrata	*Quercus stellata*	*Quercus incana*
	Quercus velutina	*Quercus laevis*
	Quercus virginiana	*Quercus palustris**
	Robinia pseudoacacia	*Quercus prinus**
	Sideroxylon lanuginosum ssp. lanuginosum	*Quercus robur fastigiata*
	Styphnolobium japonicum	*Quercus rubra*
	Syringa reticulata	*Sassafras albidum*
	Tilia americana	*Thuja occidentalis*
	Tilia tomentosa	*Tilia cordata*
	Ulmus americana 'Jefferson'	*Tsuga canadensis*
	Ulmus carpinifolia	*Ulmus americana*
	Ulmus crassifolia	*Ulmus americana 'Princeton'*
		Ulmus pumila

* Indicates a species that has limited ideal planting locations.

This list was developed by UFD Urban Foresters during 2020, based on NIACS climate change vulnerability data available at the time, PVM, and UFD subject matter expertise.

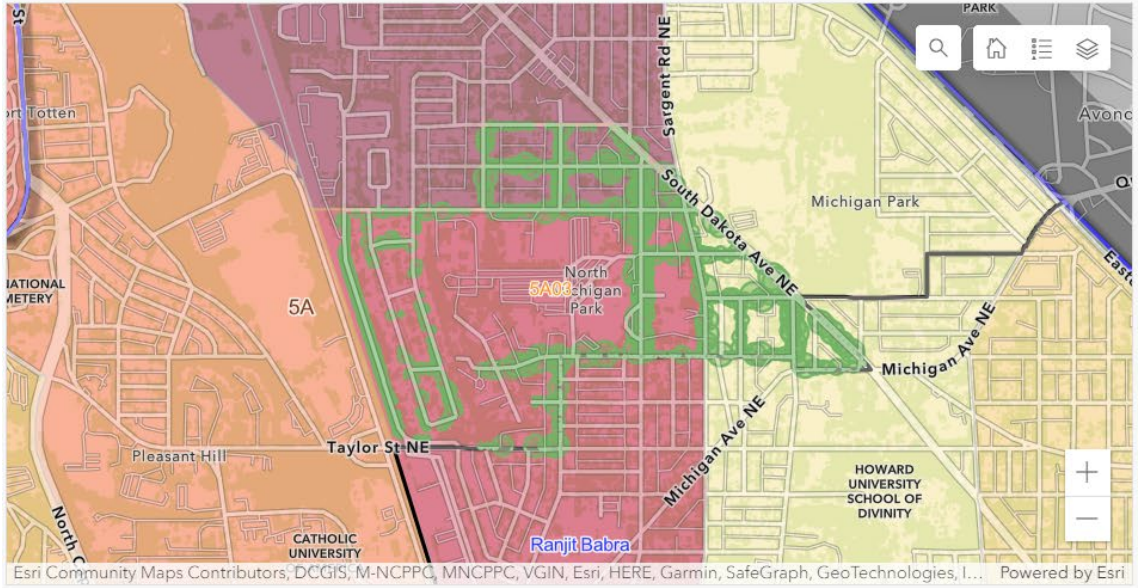
Data

- Tree Atlas, US Forest Service
- NIACS, US Forest Service
- IPCC Assessment Reports
  - Climate change models
  - Emission scenarios: low vs. high
- Pest Vulnerability Threat Scores
  - Ranges 0-49
  - Considers pests and pathogens for each tree species, weighted ranking depending on severity of impact
- **Urban Forestry Division**
  - Tree inventory database

Geography of Diversity

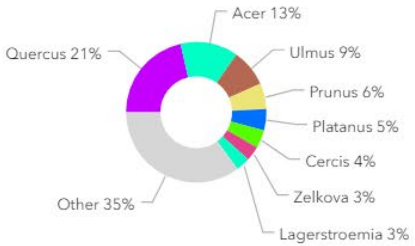
d. Trees by Geography

Select Ward	ANC	SMD	Arborist
5	5A	5A03	Ranjit Babra



Ward 5

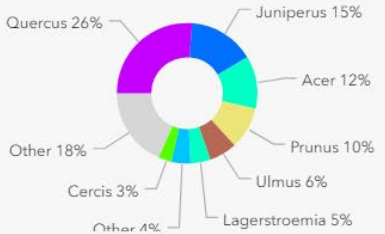
Genus (by Ward)



24.5k

SMD: 5A03

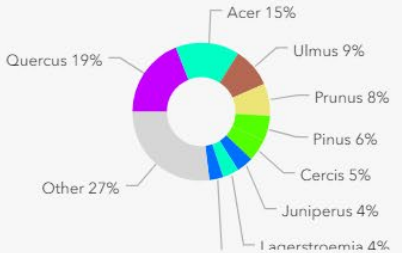
Genus (by SMD)



826

ANC: 5A

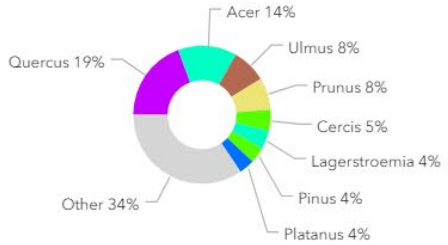
Genus (by ANC)



4.2k

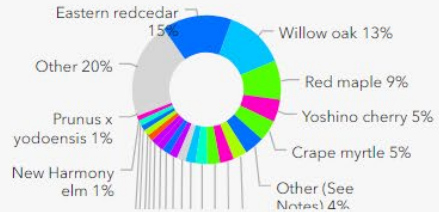
Ranjit Babra

Genus (by Arborist)



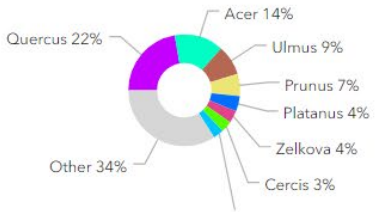
13.2k

Species (by Selected Geography)



Trees by Selected Area: 826

Genus (Citywide)



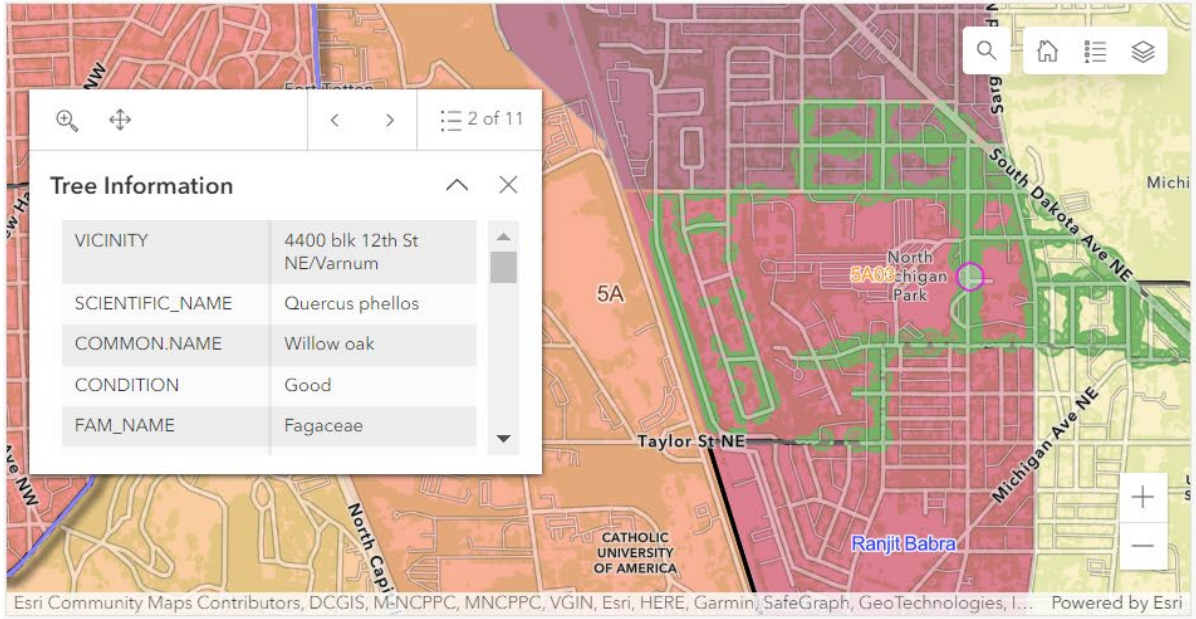
Trees in DC: 179.2k

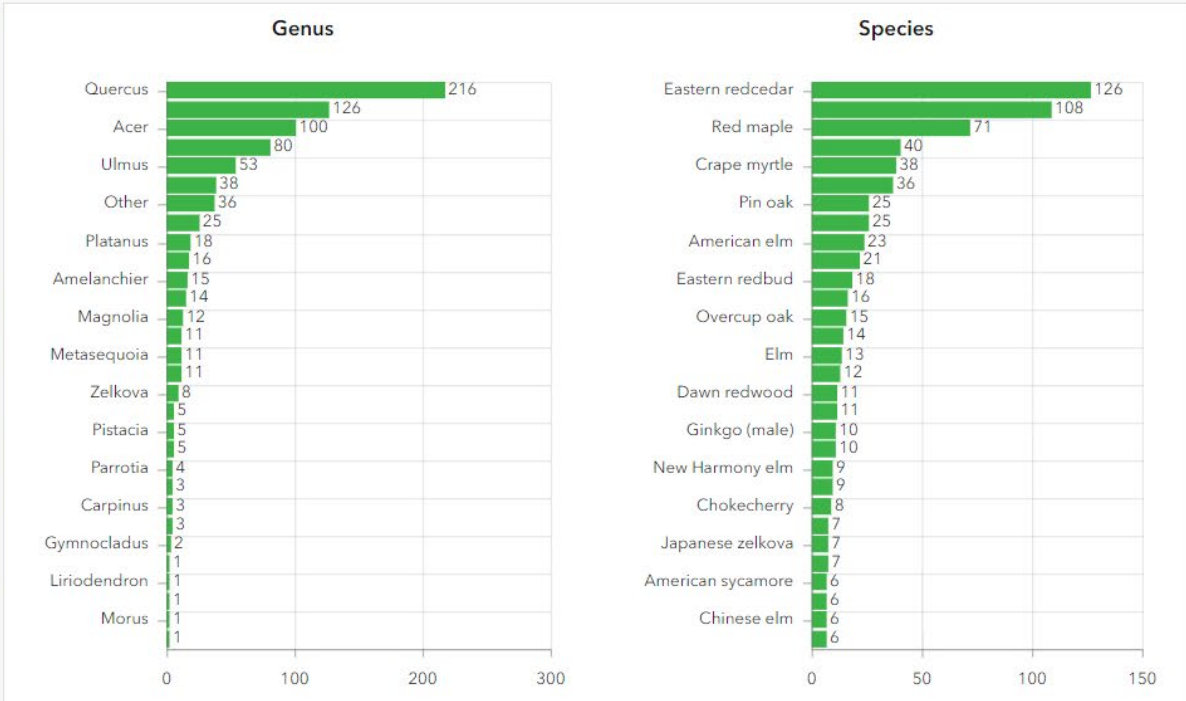
By Geography | Distribution | Benefits | Planting Priorities | Vulnerabilities

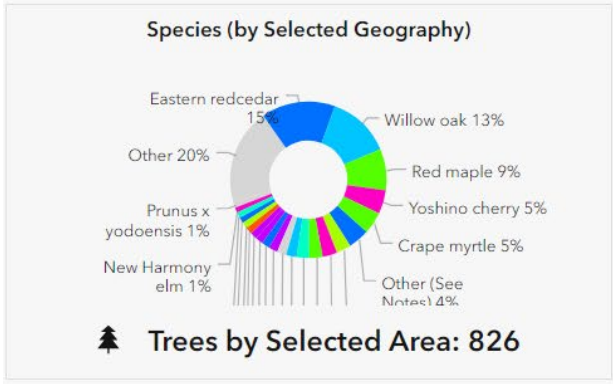
Diversity at the Neighborhood Scale

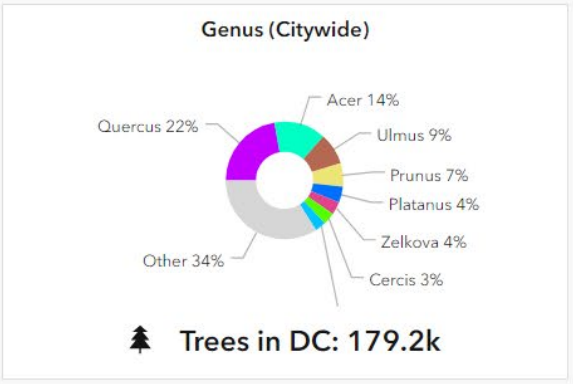
d. Trees by Geography

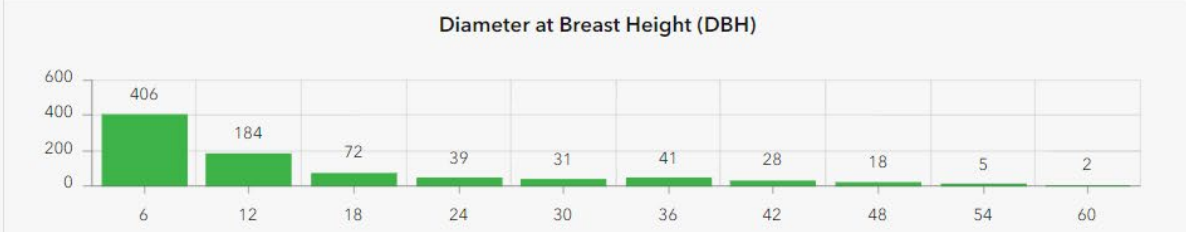
Select Ward	ANC	SMD	Arborist
5	All	5A03	Ranjit Babra









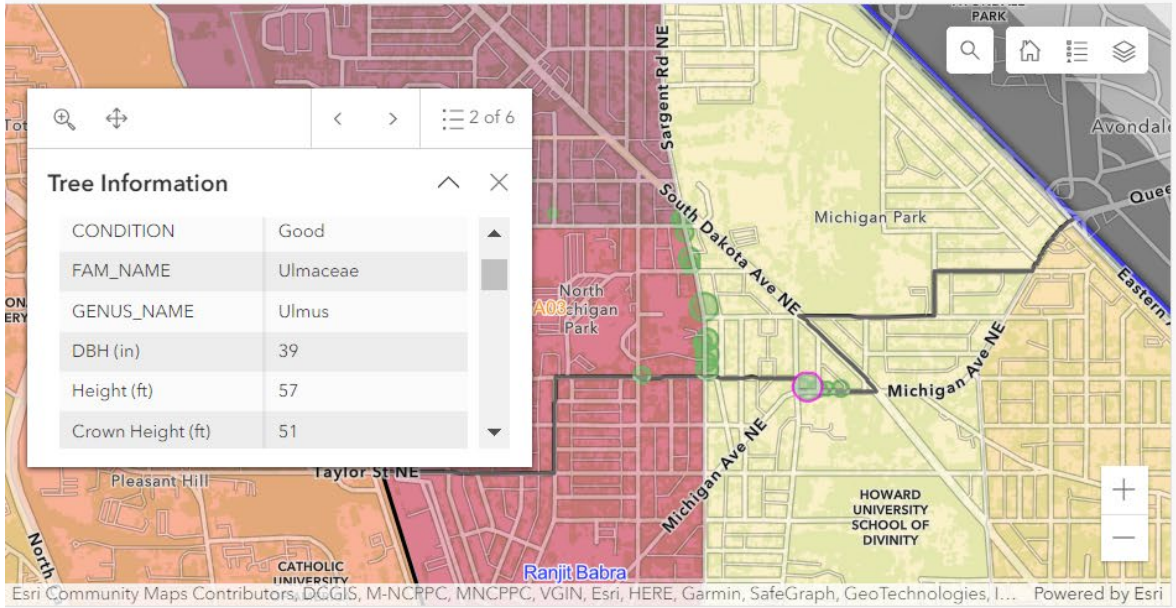


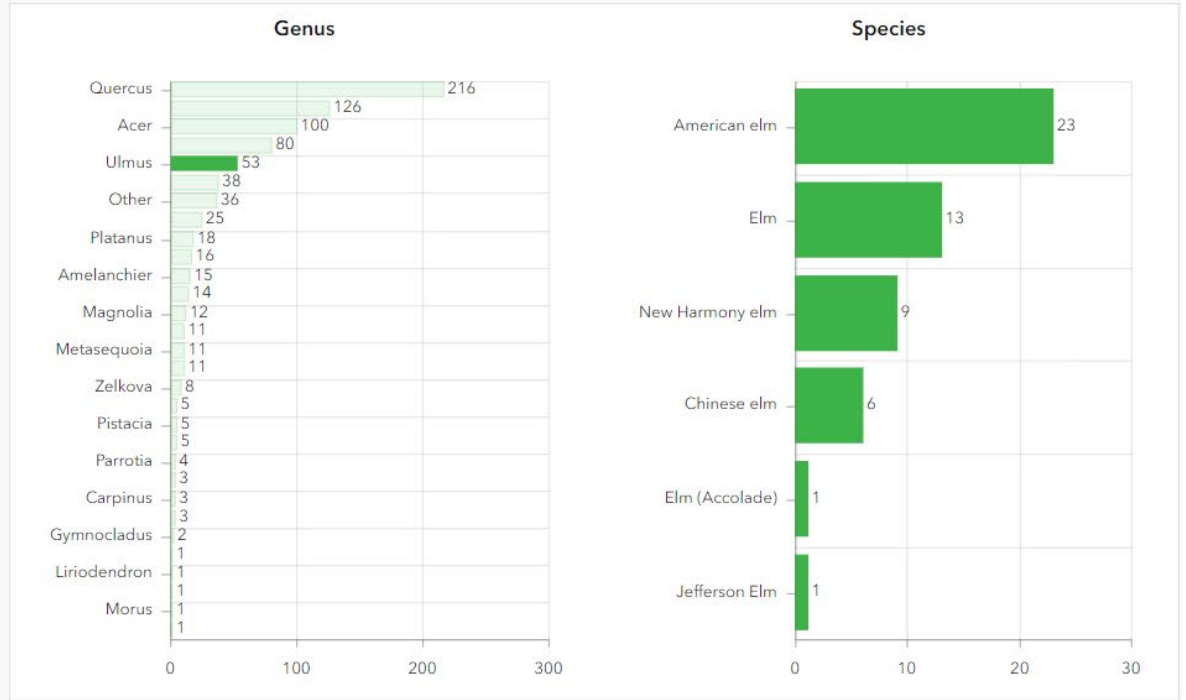
By Geography | Distribution | Benefits | Planting Priorities | Vulnerabilities

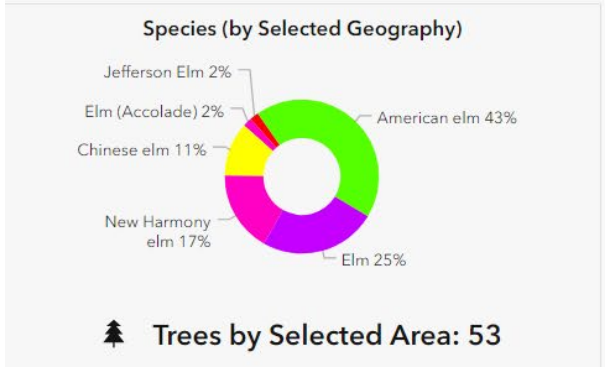
Genus Distribution and Future Species Selection

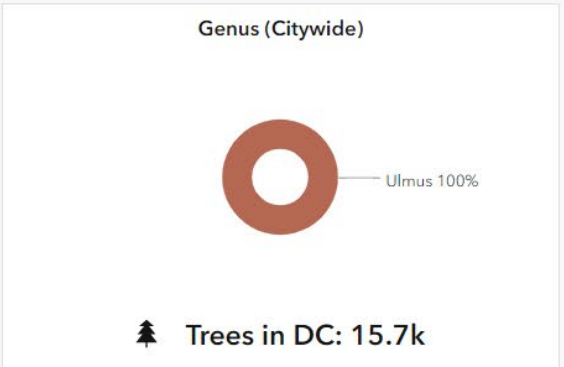
d. Trees by Geography

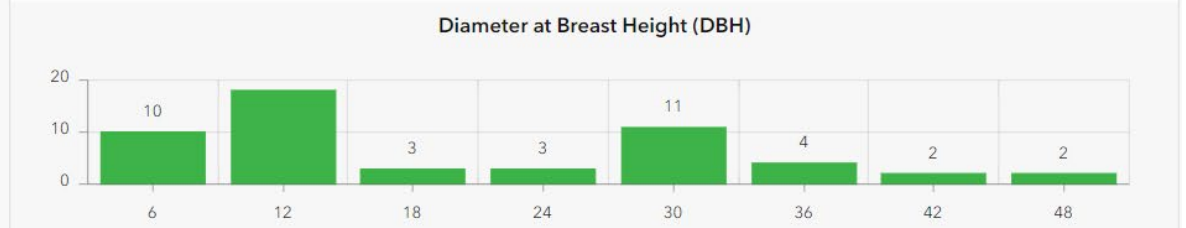
Select Ward	ANC	SMD	Arborist
5	5A	5A03	Ranjit Babra











By Geography | Distribution | Benefits | Planting Priorities | Vulnerabilities

THANK YOU!

Robert Corletta, Supervisory Forester
robert.corletta@dc.gov

DDOT Urban Forestry
https://trees.dc.gov/

https://climatereadyforests.dc.gov