City of Northfield Public Tree Inventory Summary

The tree inventory includes all individual trees in maintained (mowed) areas on city property. Completed on August 5th, 2016 the inventory includes 8,965 street trees and 2,825 park trees for a total of 11,790 trees. The following pages include tables and graphs depicting different portions of the tree inventory data as well as community tree survey from the MNDNR collected in 2010 for comparison.

It is important to understand the difference between *count* data and *biomass* data. Count data represents each tree equally and gives the total number of individual trees. In count data there is no difference between a hackberry that's 3 inches in diameter and 8 feet tall, and a hackberry that's 20 inches diameter and 40 feet tall. One tree is one tree. There are clear differences in the benefits provided by the two trees mentioned. A fully developed tree will provide much more shade, storm water interception, air quality improvement, and other benefits. To better estimate the true character of the urban forest, tree diameter can be used as the parameter of analysis. Tree diameter is roughly proportional to tree height and canopy size; or the tree's biomass. The biomass data presented in the following graphs and tables gives a better sense of which genera of trees are providing the most to the urban forest.
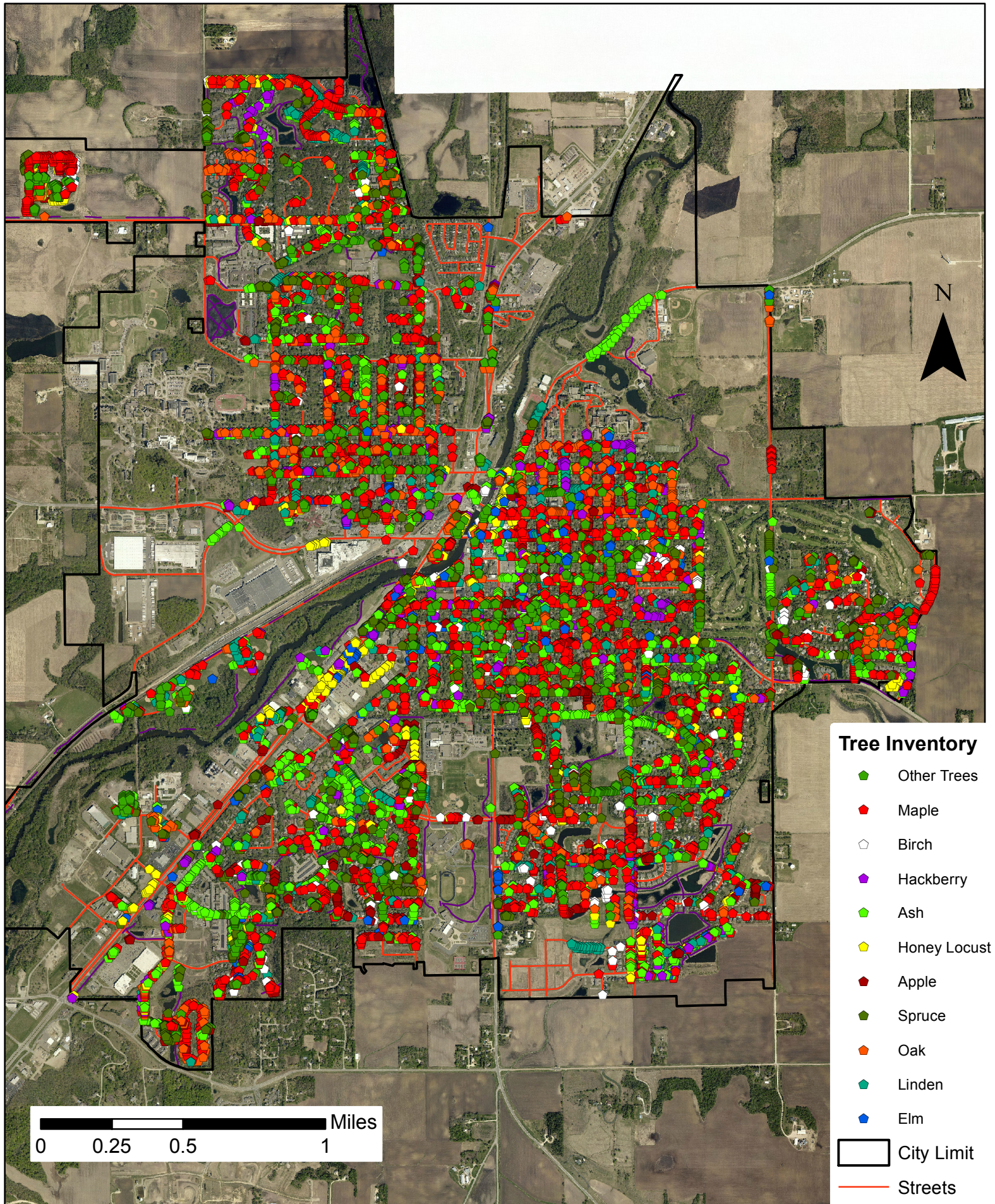
For example, apple trees are the 4th most abundant tree in the urban forest, 924 trees and 8%. However when analyzing biomass data, apple trees are now the 10th most abundant and only represent 2.3% of the urban forest biomass. Looking at ash trees, by count they make up 16% of the urban forest. Losing 16% of the forest to emerald ash borer is not the worst thing that could happen. But ash accounts for 23% of the forest biomass. Since most ash trees are fully developed trees with large canopies, losing them would decrease urban forest benefits by greater than 16%.

It is also important to know that the data presented here represents the entire City of Northfield as a whole. Urban forestry can and should be managed on the neighborhood scale as well as the city scale. There are neighborhoods and streets in Northfield dominated by ash, maple and other species. Threats like emerald ash borer will not affect residents equally across the City.

Noteworthy Points:

- The urban forest includes more than 40 different tree genera and over 75 tree species
- The urban forest is dominated by maple: 34% biomass, 28% count (poor species diversity)
- Ash makes up 16% of the forest, but 23% by biomass
    - Not an outrageous portion, but most of this will be lost to emerald ash borer
- Maple and ash combined account for about one half of the urban forest
    - Count: 45% maple and ash
    - Biomass: 58% maple and ash
- By count, 10 genera make up 90% of the forest
    - Maple, Ash, Spruce, Apple, Linden, Oak, Hackberry, Honey Locust, Pine, and Birch
- By biomass, 8 genera account for 90% of the forest
    - Maple, Ash, Linden, Spruce, Hackberry, Oak, Honey Locust, and Pine

City of Northfield Public Tree Inventory

Tree Inventory

- ⬠ Other Trees
- ⬠ Maple
- ⬠ Birch
- ⬠ Hackberry
- ⬠ Ash
- ⬠ Honey Locust
- ⬠ Apple
- ⬠ Spruce
- ⬠ Oak
- ⬠ Linden
- ⬠ Elm

▢ City Limit

— Streets

N

Miles

0   0.25   0.5   1

Tree Species List

#	Genus	Species	Common Name	#	Genus	Species	Common Name
1	Abies	Balsamea	Balsam Fir	50	Prunus	Maackii	Amur Chokecherry
2	Acer	Ginnala	Amur Maple	51	Prunus	Serotina	Black Cherry
3	Acer	Palmatum	Black Maple	52	Prunus	Virginiana	Chokecherry
4	Acer	Negundo	Boxelder	53	Prunus	Salicina	Toka Plum
5	Acer	Freemanii	Freeman Maple	54	Quercus	Macrocarpa	Bur Oak
6	Acer	Platanoides	Norway Maple	55	Quercus	Ellipsoidalis	Northern Pin Oak
7	Acer	Rubrum	Red Maple	56	Quercus	Rubra	Northern Red Oak
8	Acer	Saccharinum	Silver Maple	57	Quercus	Bicolor	Swamp White Oak
9	Acer	Saccharum	Sugar Maple	58	Quercus	Alba	White Oak
10	Acer	Tataricum	Tatarian Maple	59	Rhamnus	Cathartica	Common Buckthorn
11	Aesculus	Glabra	Ohio Buckeye	60	Robinia	Pseudoacacia	Black Locust
12	Alnus	Unknown	Alder	61	Salix	Unknown	Willow
13	Amelanchier	Unknown	Serviceberry	62	Sorbus	Decora	Showy Mountain Ash
14	Betula	Platyphylla	Dakota Pinnacle Birch	63	Syringa	Meyeri	Dwarf Korean Lilac
15	Betula	Papyrifera	Paper Birch	64	Syringa	Reticulata	Japanese Tree Lilac
16	Betula	Nigra	River Birch	65	Thuja	Occidentalis	Northern Whitecedar
17	Betula	Alleghaniensis	Yellow Birch	66	Tilia	Americana	Basswood
18	Carpinus	Caroliniana	Blue Beech	67	Tilia	Cordata	Littleleaf Linden
19	Catalpa	Speciosa	Northern Catalpa	68	Tsuga	Canadensis	Eastern Hemlock
20	Celtis	Occidentalis	Common Hackberry	69	Ulmus	Americana	American Elm
21	Cercis	Canadensis	Eastern Redbud	70	Ulmus	Pumila	Siberian Elm
22	Crataegus	Unknown	Hawthorn	71	Ulmus	Rubra	Slippery Elm
23	Elaeagnus	Angustifolia	Russian-Olive				
24	Euonymus	Alatus	Burning Bush				
25	Forsythia	Unknown	Forsythia				
26	Fraxinus	Nigra	Black Ash				
27	Fraxinus	Pennsylvanica	Green Ash				
28	Fraxinus	Americana	White Ash				
29	Ginkgo	Biloba	Ginkgo				
30	Gleditsia	Triacanthos	Honey-Locust				
31	Gymnocladus	Dioicus	Kentucky Coffeetree				
32	Juglans	Nigra	Black Walnut				
33	Juniperus	Unknown	Juniper				
34	Larix	Laricina	Tamarack				
35	Magnolia	Unknown	Magnolia				
36	Malus	Unknown	Apple				
37	Ostrya	Virginiana	Ironwood				
38	Phellodendron	Amurense	Amur Corktree				
39	Picea	Mariana	Black Spruce				
40	Picea	Pungens	Blue Spruce				
41	Picea	Alpestris	Norway Spruce				
42	Picea	Glauca	White Spruce				
43	Pinus	Strobus	Eastern White Pine				
44	Pinus	Banksiana	Jack Pine				
45	Pinus	Resinosa	Red Pine				
46	Populus	Balsamifera	Balsam Poplar				
47	Populus	Grandidentata	Bigtooth Aspen				
48	Populus	Deltoides	Eastern Cottonwood				
49	Populus	Tremuloides	Quaking Aspen				

Northfield Shade Tree Abundance: Street and Park Trees

Rank	Genus	Name	Count	Percent	Cumulative Percent	Average DBH	Max DBH	
1	Acer	Maple	3351	28.4%	28.4%	11.4	62	
2	Fraxinus	Ash	1927	16.3%	44.8%	13.7	41	50%
3	Picea	Spruce	945	8.0%	52.8%	7.9	31	
4	Malus	Apple	924	7.8%	60.6%	2.8	17	
5	Tilia	Linden	915	7.8%	68.4%	10.6	42	
6	Quercus	Oak	765	6.5%	74.9%	7.0	47	75%
7	Celtis	Hackberry	479	4.1%	78.9%	12.0	43	
8	Gleditsia	Honey Locust	448	3.8%	82.7%	9.7	31	
9	Pinus	Pine	356	3.0%	85.8%	10.1	29	
10	Betula	Birch	335	2.8%	88.6%	4.8	22	90%
11	Ulmus	Elm	296	2.5%	91.1%	8.8	52	
12	Thuja	Cedar	190	1.6%	92.7%	1.8	15	
13	Syringa	Lilac	120	1.0%	93.7%	1.4	6	
14	Ginkgo	Ginkgo	74	0.6%	94.4%	2.4	18	
15	Sorbus	Mountain Ash	70	0.6%	95.0%	2.5	13	
16	Juglans	Walnut	69	0.6%	95.5%	18.1	50	
17	Populus	Poplar	69	0.6%	96.1%	13.7	74	
18	Amelanchier	Serviceberry	60	0.5%	96.6%	1.0	4	
19	Crataegus	Hawthorn	40	0.3%	97.0%	2.5	13	
20	Prunus	Cherry/Plum	37	0.3%	97.3%	6.1	28	
21	Ostrya	Ironwood	34	0.3%	97.6%	4.5	18	
22	Juniperus	Juniper	32	0.3%	97.8%	4.5	19	
23	Magnolia	Magnolia	31	0.3%	98.1%	0.5	2	
24	Phellodendron	Amur Corktree	29	0.2%	98.4%	13.6	29	
25	Aesculus	Buckeye	28	0.2%	98.6%	9.7	24	
26	Gymnocladus	Kentucky Coffeetree	27	0.2%	98.8%	8.3	16	
27	Salix	Willow	26	0.2%	99.0%	11.9	50	
28	Larix	Larch	22	0.2%	99.2%	3.4	28	
29	Unknown	Unknown	20	0.2%	99.4%	1.5	8	
30	Cercis	Redbud	16	0.1%	99.5%	0.6	2	
31	Cornus	Dogwood	11	0.1%	99.6%	0.6	2	
32	Catalpa	Catalpa	10	0.1%	99.7%	11.6	43	
33	Abies	Fir	7	0.1%	99.8%	8.3	12	
34	Rhamnus	Buckthorn	6	0.1%	99.8%	1.8	5	
35	Carpinus	Blue Beech	5	0.0%	99.9%	0.6	2	
36	Alnus	Alder	4	0.0%	99.9%	8.8	15	
37	Forsythia	Forsythia	4	0.0%	99.9%	0.0	0	
38	Robinia	Black Locust	3	0.0%	100.0%	12.0	18	
39	Elaeagnus	Olive	2	0.0%	100.0%	17.0	18	
40	Euonymus	Burning Bush	2	0.0%	100.0%	0.0	0	
41	Tsuga	Hemlock	1	0.0%	100.0%	8.0	8	
		Total	11790	100%				

Northfield Shade Tree Abundance: Street Trees

Rank	Genus	Name	Count	Percent	Cumulative Percent	Average DBH	Max DBH	
1	Acer	Maple	2842	31.7%	31.7%	12.0	62	
2	Fraxinus	Ash	1624	18.1%	49.8%	13.9	41	50%
3	Tilia	Linden	783	8.7%	58.5%	10.6	42	
4	Malus	Apple	733	8.2%	66.7%	2.6	12	
5	Picea	Spruce	555	6.2%	72.9%	8.4	28	75%
6	Quercus	Oak	533	5.9%	78.9%	7.3	41	
7	Celtis	Hackberry	385	4.3%	83.2%	12.6	43	
8	Gleditsia	Honey Locust	276	3.1%	86.2%	9.8	31	
9	Ulmus	Elm	225	2.5%	88.7%	9.2	52	90%
10	Betula	Birch	150	1.7%	90.4%	5.6	22	
11	Thuja	Cedar	142	1.6%	92.0%	2.1	12	
12	Pinus	Pine	101	1.1%	93.1%	10.8	29	
13	Syringa	Lilac	101	1.1%	94.3%	1.4	6	
14	Sorbus	Mountain Ash	66	0.7%	95.0%	2.5	13	
15	Ginkgo	Ginkgo	65	0.7%	95.7%	2.5	18	
16	Juglans	Walnut	56	0.6%	96.3%	18.2	50	
17	Amelanchier	Serviceberry	43	0.5%	96.8%	0.9	4	
18	Populus	Poplar	40	0.4%	97.3%	15.8	54	
19	Magnolia	Magnolia	31	0.3%	97.6%	0.5	2	
20	Prunus	Cherry/Plum	29	0.3%	97.9%	2.4	8	
21	Aesculus	Buckeye	20	0.2%	98.2%	9.8	24	
22	Gymnocladus	Kentucky Coffeetree	20	0.2%	98.4%	8.2	16	
23	Ostrya	Ironwood	18	0.2%	98.6%	6.2	18	
24	Juniperus	Juniper	17	0.2%	98.8%	7.7	19	
25	Unknown	Unknown	16	0.2%	99.0%	1.5	8	
26	Crataegus	Hawthorn	13	0.1%	99.1%	0.8	4	
27	Salix	Willow	12	0.1%	99.2%	10.1	42	
28	Phellodendron	Amur Corktree	11	0.1%	99.4%	14.3	29	
29	Catalpa	Catalpa	10	0.1%	99.5%	11.6	43	
30	Cercis	Redbud	9	0.1%	99.6%	1.1	2	
31	Abies	Fir	7	0.1%	99.6%	8.3	12	
32	Rhamnus	Buckthorn	6	0.1%	99.7%	1.8	5	
33	Carpinus	Blue Beech	5	0.1%	99.8%	0.6	2	
34	Larix	Larch	5	0.1%	99.8%	11.6	28	
35	Alnus	Alder	4	0.0%	99.9%	8.8	15	
36	Cornus	Dogwood	4	0.0%	99.9%	0.0	0	
37	Robinia	Black Locust	3	0.0%	99.9%	12.0	18	
38	Elaeagnus	Olive	2	0.0%	100.0%	17.0	18	
39	Euonymus	Burning Bush	2	0.0%	100.0%	0.0	0	
40	Tsuga	Hemlock	1	0.0%	100.0%	8.0	8	
		Total	**8965**	**100%**				

Northfield Shade Tree Abundance: Park Trees

Rank	Genus	Name	Count	Percent	Cumulative Percent	Average DBH	Max DBH	
1	Acer	Maple	509	18.0%	18.0%	8.0	45	
2	Picea	Spruce	390	13.8%	31.8%	7.3	31	
3	Fraxinus	Ash	303	10.7%	42.5%	12.6	28	50%
4	Pinus	Pine	255	9.0%	51.6%	9.8	29	
5	Quercus	Oak	232	8.2%	59.8%	6.4	47	
6	Malus	Apple	191	6.8%	66.5%	3.6	17	
7	Betula	Birch	185	6.5%	73.1%	4.2	20	75%
8	Gleditsia	Honey Locust	172	6.1%	79.2%	9.5	30	
9	Tilia	Linden	132	4.7%	83.9%	10.5	38	
10	Celtis	Hackberry	94	3.3%	87.2%	9.5	26	
11	Ulmus	Elm	71	2.5%	89.7%	7.5	48	90%
12	Thuja	Cedar	48	1.7%	91.4%	0.7	15	
13	Populus	Poplar	29	1.0%	92.4%	10.3	74	
14	Crataegus	Hawthorn	27	1.0%	93.4%	3.3	13	
15	Syringa	Lilac	19	0.7%	94.1%	1.6	3	
16	Phellodendron	Amur Corktree	18	0.6%	94.7%	13.2	26	
17	Amelanchier	Serviceberry	17	0.6%	95.3%	1.3	2	
18	Larix	Larch	17	0.6%	95.9%	0.9	8	
19	Ostrya	Ironwood	16	0.6%	96.5%	2.6	8	
20	Juniperus	Juniper	15	0.5%	97.0%	1.0	1	
21	Salix	Willow	14	0.5%	97.5%	13.4	50	
22	Juglans	Walnut	13	0.5%	97.9%	17.7	30	
23	Ginkgo	Ginkgo	9	0.3%	98.3%	1.8	2	
24	Aesculus	Buckeye	8	0.3%	98.5%	9.4	23	
25	Prunus	Cherry/Plum	8	0.3%	98.8%	19.6	28	
26	Cercis	Redbud	7	0.2%	99.1%	0.0	0	
27	Cornus	Dogwood	7	0.2%	99.3%	1.3	2	
28	Gymnocladus	Kentucky Coffeetree	7	0.2%	99.6%	8.9	14	
29	Forsythia	Forsythia	4	0.1%	99.7%	0.0	0	
30	Sorbus	Mountain Ash	4	0.1%	99.9%	4.0	5	
31	Unknown	Unknown	4	0.1%	100.0%	1.7	3	
		Total	**2825**	**100%**				

Shade Tree Abundance by Genera: Street and Park Trees
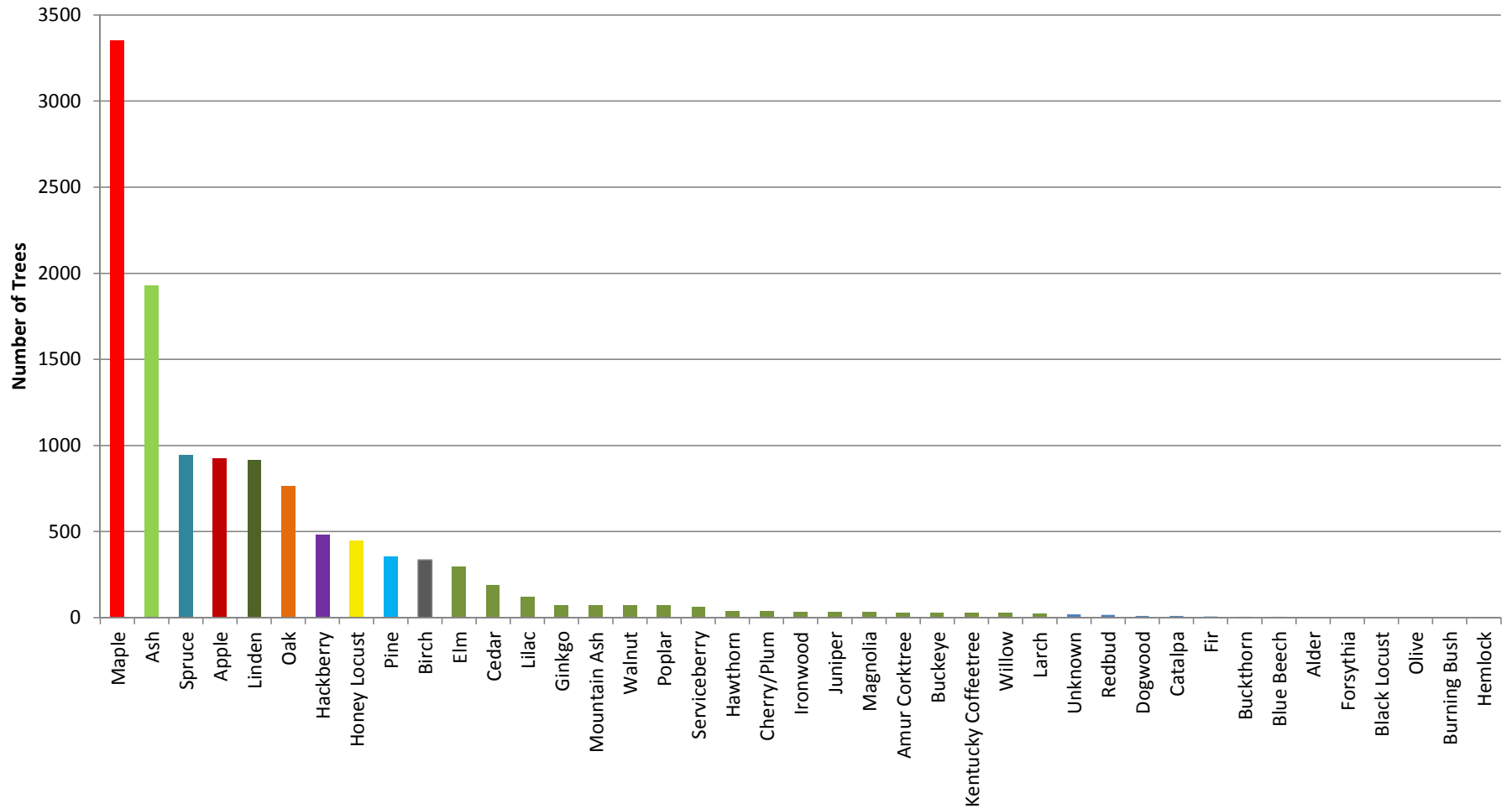
Northfield Shade Tree Abundance: Street and Park Trees

- Maple 28%
- Ash 16%
- Spruce 8%
- Apple 8%
- Linden 8%
- Oak 6%
- Other 6%
- Hackberry 4%
- Honey Locust 4%
- Pine 3%
- Birch 3%
- Elm 3%
- Cedar 2%
- Lilac 1%
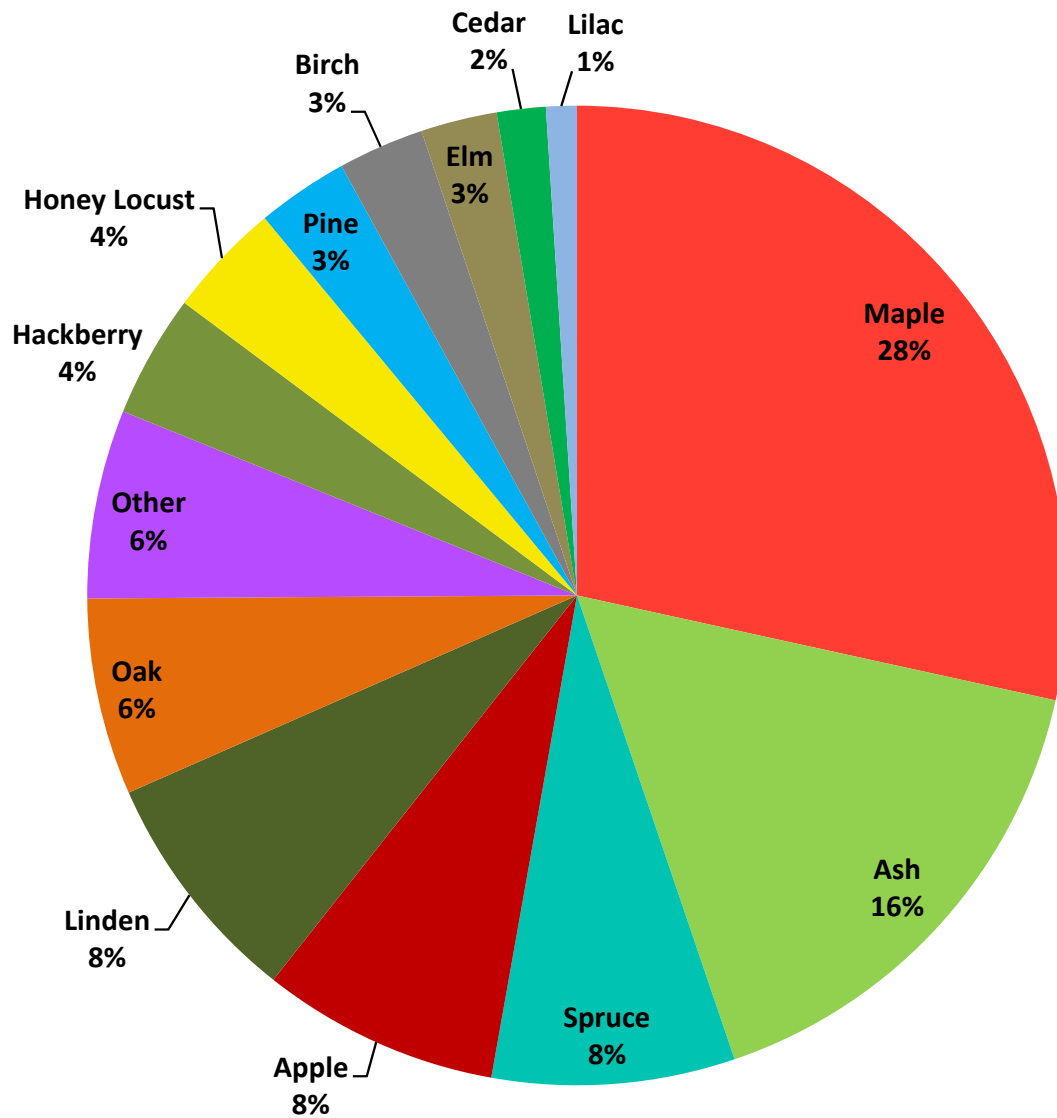
Northfield Shade Tree Abundance and Diameter by Genera
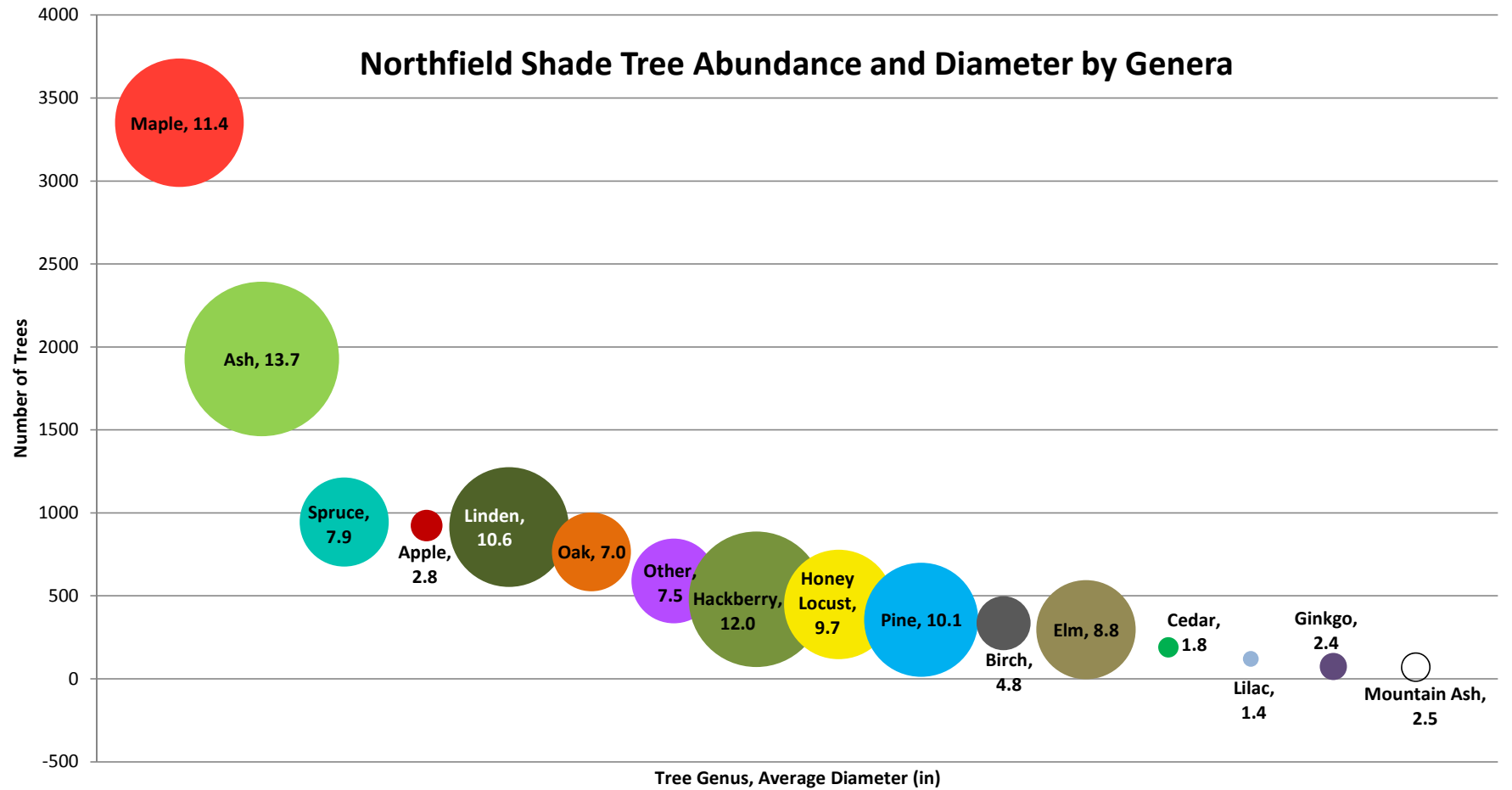
Number of Trees

Maple, 11.4
Ash, 13.7
Spruce, 7.9
Apple, 2.8
Linden, 10.6
Oak, 7.0
Other, 7.5
Hackberry, 12.0
Honey Locust, 9.7
Pine, 10.1
Birch, 4.8
Elm, 8.8
Cedar, 1.8
Lilac, 1.4
Ginkgo, 2.4
Mountain Ash, 2.5

Tree Genus, Average Diameter (in)

Northfield Shade Tree Biomass: Street and Park Trees

Rank	Genus	Name	DBH Sum	Percent	Cumulative Percent	Average DBH	
1	Acer	Maple	38163	34.0%	34.0%	11.4	
2	Fraxinus	Ash	26394	23.5%	57.5%	13.7	60%
3	Tilia	Linden	9672	8.6%	66.1%	10.6	
4	Picea	Spruce	7242	6.5%	72.6%	7.9	75%
5	Celtis	Hackberry	5730	5.1%	77.7%	12.0	
6	Quercus	Oak	5283	4.7%	82.4%	7.0	
7	Gleditsia	Honey Locust	4320	3.8%	86.3%	9.7	
8	Pinus	Pine	3487	3.1%	89.4%	10.1	90%
9	Ulmus	Elm	2599	2.3%	91.7%	8.8	
10	Malus	Apple	2526	2.3%	93.9%	2.8	
11	Betula	Birch	1535	1.4%	95.3%	4.8	
12	Juglans	Walnut	1248	1.1%	96.4%	18.1	
13	Populus	Poplar	901	0.8%	97.2%	13.7	
14	Phellodendron	Amur Corktree	394	0.4%	97.6%	13.6	
15	Thuja	Cedar	324	0.3%	97.8%	1.8	
16	Salix	Willow	298	0.3%	98.1%	11.9	
17	Aesculus	Buckeye	271	0.2%	98.4%	9.7	
18	Prunus	Cherry/Plum	227	0.2%	98.6%	6.1	
19	Gymnocladus	Kentucky Coffeetree	225	0.2%	98.8%	8.3	
20	Sorbus	Mountain Ash	178	0.2%	98.9%	2.5	
21	Ginkgo	Ginkgo	177	0.2%	99.1%	2.4	
22	Syringa	Lilac	171	0.2%	99.2%	1.4	
23	Ostrya	Ironwood	152	0.1%	99.4%	4.5	
24	Juniperus	Juniper	138	0.1%	99.5%	4.5	
25	Catalpa	Catalpa	116	0.1%	99.6%	11.6	
26	Crataegus	Hawthorn	101	0.1%	99.7%	2.5	
27	Larix	Larch	74	0.1%	99.7%	3.4	
28	Abies	Fir	58	0.1%	99.8%	8.3	
29	Amelanchier	Serviceberry	51	0.0%	99.8%	1.0	
30	Robinia	Black Locust	36	0.0%	99.9%	12.0	
31	Alnus	Alder	35	0.0%	99.9%	8.8	
32	Elaeagnus	Olive	34	0.0%	99.9%	17.0	
33	Unknown	Unknown	24	0.0%	100.0%	1.5	
34	Magnolia	Magnolia	15	0.0%	100.0%	0.5	
35	Cercis	Redbud	10	0.0%	100.0%	0.6	
36	Rhamnus	Buckthorn	9	0.0%	100.0%	1.8	
37	Tsuga	Hemlock	8	0.0%	100.0%	8.0	
38	Cornus	Dogwood	5	0.0%	100.0%	0.6	
39	Carpinus	Blue Beech	3	0.0%	100.0%	0.6	
40	Forsythia	Forsythia	0	0.0%	100.0%	0.0	
41	Euonymus	Burning Bush	0	0.0%	100.0%	0.0	
		Total	112234	100%			

Northfield Shade Tree Biomass: Street Trees

Rank	Genus	Name	DBH Sum	Percent	Cumulative Percent	Average DBH	
1	Acer	Maple	34070	37.7%	37.7%	12.0	
2	Fraxinus	Ash	22569	25.0%	62.6%	13.9	
3	Tilia	Linden	8289	9.2%	71.8%	10.6	**75%**
7	Celtis	Hackberry	4834	5.3%	77.2%	12.6	
5	Picea	Spruce	4544	5.0%	82.2%	8.4	
6	Quercus	Oak	3841	4.2%	86.4%	7.3	
8	Gleditsia	Honey Locust	2704	3.0%	89.4%	9.8	**90%**
9	Ulmus	Elm	2067	2.3%	91.7%	9.2	
4	Malus	Apple	1840	2.0%	93.7%	2.6	
12	Pinus	Pine	1045	1.2%	94.9%	10.8	
16	Juglans	Walnut	1018	1.1%	96.0%	18.2	
10	Betula	Birch	827	0.9%	96.9%	5.6	
18	Populus	Poplar	633	0.7%	97.6%	15.8	
11	Thuja	Cedar	290	0.3%	98.0%	2.1	
21	Aesculus	Buckeye	196	0.2%	98.2%	9.8	
22	Gymnocladus	Kentucky Coffeetree	163	0.2%	98.4%	8.2	
14	Sorbus	Mountain Ash	162	0.2%	98.5%	2.5	
15	Ginkgo	Ginkgo	161	0.2%	98.7%	2.5	
28	Phellodendron	Amur Corktree	157	0.2%	98.9%	14.3	
13	Syringa	Lilac	141	0.2%	99.0%	1.4	
24	Juniperus	Juniper	123	0.1%	99.2%	7.7	
29	Catalpa	Catalpa	116	0.1%	99.3%	11.6	
23	Ostrya	Ironwood	111	0.1%	99.4%	6.2	
27	Salix	Willow	111	0.1%	99.6%	10.1	
20	Prunus	Cherry/Plum	70	0.1%	99.6%	2.4	
31	Abies	Fir	58	0.1%	99.7%	8.3	
34	Larix	Larch	58	0.1%	99.8%	11.6	
37	Robinia	Black Locust	36	0.0%	99.8%	12.0	
35	Alnus	Alder	35	0.0%	99.8%	8.8	
38	Elaeagnus	Olive	34	0.0%	99.9%	17.0	
17	Amelanchier	Serviceberry	33	0.0%	99.9%	0.9	
25	Unknown	Unknown	19	0.0%	99.9%	1.5	
19	Magnolia	Magnolia	15	0.0%	100.0%	0.5	
26	Crataegus	Hawthorn	11	0.0%	100.0%	0.8	
30	Cercis	Redbud	10	0.0%	100.0%	1.1	
32	Rhamnus	Buckthorn	9	0.0%	100.0%	1.8	
40	Tsuga	Hemlock	8	0.0%	100.0%	8.0	
33	Carpinus	Blue Beech	3	0.0%	100.0%	0.6	
36	Cornus	Dogwood	0	0.0%	100.0%	0.0	
39	Euonymus	Burning Bush	0	0.0%	100.0%	0.0	
		Total	**90411**	**100%**			

Northfield Shade Tree Biomass: Park Trees

Rank	Genus	Name	DBH Sum	Percent	Cumulative Percent	Average DBH	
1	Acer	Maple	4093	18.8%	18.8%	8.0	
3	Fraxinus	Ash	3825	17.5%	36.3%	12.6	
2	Picea	Spruce	2698	12.4%	48.6%	7.3	50%
4	Pinus	Pine	2442	11.2%	59.8%	9.8	
8	Gleditsia	Honey Locust	1616	7.4%	67.2%	9.5	
5	Quercus	Oak	1442	6.6%	73.8%	6.4	75%
9	Tilia	Linden	1383	6.3%	80.2%	10.5	
10	Celtis	Hackberry	896	4.1%	84.3%	9.5	
7	Betula	Birch	708	3.2%	87.5%	4.2	90%
6	Malus	Apple	686	3.1%	90.7%	3.6	
11	Ulmus	Elm	532	2.4%	93.1%	7.5	
13	Populus	Poplar	268	1.2%	94.3%	10.3	
16	Phellodendron	Amur Corktree	237	1.1%	95.4%	13.2	
22	Juglans	Walnut	230	1.1%	96.5%	17.7	
21	Salix	Willow	187	0.9%	97.3%	13.4	
25	Prunus	Cherry/Plum	157	0.7%	98.1%	19.6	
14	Crataegus	Hawthorn	90	0.4%	98.5%	3.3	
24	Aesculus	Buckeye	75	0.3%	98.8%	9.4	
28	Gymnocladus	Kentucky Coffeetree	62	0.3%	99.1%	8.9	
19	Ostrya	Ironwood	41	0.2%	99.3%	2.6	
12	Thuja	Cedar	34	0.2%	99.4%	0.7	
15	Syringa	Lilac	30	0.1%	99.6%	1.6	
17	Amelanchier	Serviceberry	18	0.1%	99.7%	1.3	
18	Larix	Larch	16	0.1%	99.7%	0.9	
23	Ginkgo	Ginkgo	16	0.1%	99.8%	1.8	
30	Sorbus	Mountain Ash	16	0.1%	99.9%	4.0	
20	Juniperus	Juniper	15	0.1%	100.0%	1.0	
27	Cornus	Dogwood	5	0.0%	100.0%	1.3	
31	Unknown	Unknown	5	0.0%	100.0%	1.7	
26	Cercis	Redbud	0	0.0%	100.0%	0.0	
29	Forsythia	Forsythia	0	0.0%	100.0%	0.0	
		Total	21823	100%			

Shade Tree Biomass by Genera: Street and Park Trees

Y-axis: Summed Tree Diameters (in)

X-axis categories: Maple, Ash, Linden, Spruce, Hackberry, Oak, Honey Locust, Pine, Elm, Apple, Birch, Walnut, Poplar, Amur Corktree, Cedar, Willow, Buckeye, Cherry/Plum, Kentucky Coffeetree, Mountain Ash, Ginkgo, Lilac, Ironwood, Juniper, Catalpa, Hawthorn, Larch, Fir, Serviceberry, Black Locust, Alder, Olive, Unknown, Magnolia, Redbud, Buckthorn, Hemlock, Dogwood, Blue Beech, Forsythia, Burning Bush

Northfield Shade Tree Biomass:
Street and Park Trees

- Maple 34%
- Ash 24%
- Linden 9%
- Spruce 6%
- Hackberry 5%
- Oak 5%
- Honey Locust 4%
- Pine 3%
- Other 3%
- Elm 2%
- Apple 2%
- Birch 1%
- Walnut 1%
- Poplar 1%

2010 MNDNR Community Tree Survey Results

The following pages include tree survey data collected by the Minnesota DNR in 2010. The DNR surveyed communities across the state including Northfield. This data was interpolated from a tree survey (not a complete inventory) and includes trees on private property. The sample technique is explained in the graphics below. Data is presented for the City of Northfield and the state as a whole.

SAMPLE AREA

You will be traversing both sides of the street along the survey route and recording trees greater than 1" in diameter within a perpendicular distance of 66' from the curb. In the absence of a curb, use the edge of the road surface. For roads without a hard surface and/or where vegetation is encroaching on the road edge, estimate where the road edge would be.
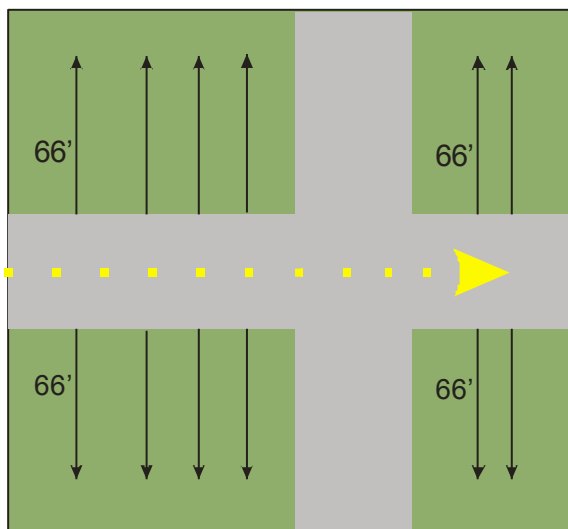
Record the trees within 66' of the curb along the <u>entire</u> route; this means that trees that fall within the sample area on a corner will be counted twice.
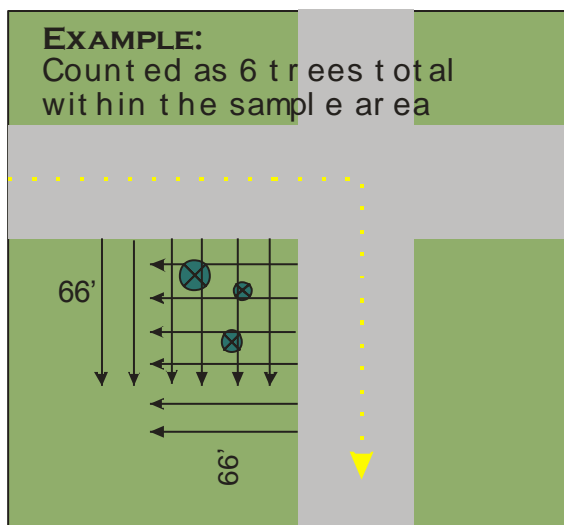
DNR 2010 Community Tree Survey for the City of Northfield, Rice County

** Only maintained areas are surveyed. Maintained areas are periodically mowed or fall within an artificial surface, (e.g. parking lot).

Table 1. Diversity of tree genera, size class distribution, and healthy tree population and percents.

| Genera | Dead trees are included in population numbers & all percents. | | | | | | Only live trees are included in numbers & percents. | | |
| | | | Size Classes ++ | | | | All Classes | | |
	Population	Genera %	Small	Medium	Large	Super	Population	Genera %	Healthy
Acer (Maple)	16,300	25.0%	31.7%	34.4%	19.5%	14.4%	16,300	25.0%	93.1%
Picea (Spruce)	11,400	17.5%	29.5%	48.3%	22.2%	0.0%	11,400	17.5%	100.0%
Fraxinus (Ash)	9,700	14.9%	8.5%	38.7%	42.2%	10.6%	9,700	14.9%	95.5%
Malus (Apple)	5,100	7.9%	69.5%	27.6%	2.9%	0.0%	5,100	7.9%	99.0%
Betula (Birch)	4,400	6.7%	56.7%	26.7%	16.7%	0.0%	4,400	6.7%	100.0%
Tilia (Basswood)	3,000	4.6%	19.4%	27.4%	40.3%	12.9%	3,000	4.6%	98.4%
Pinus (Pine)	2,400	3.7%	18.0%	64.0%	14.0%	4.0%	2,400	3.7%	100.0%
Quercus (Oak)	1,800	2.8%	56.8%	32.4%	10.8%	0.0%	1,800	2.8%	94.6%
Ulmus (Elm)	1,700	2.6%	60.0%	25.7%	8.6%	5.7%	1,700	2.6%	97.1%
Gleditsia (Honeylocust)	1,700	2.5%	29.4%	32.4%	35.3%	2.9%	1,700	2.5%	88.2%
Juglans (Black Walnut)	1,300	1.9%	15.4%	53.8%	19.2%	11.5%	1,300	1.9%	100.0%
Populus (Poplar)	1,100	1.6%	31.8%	45.5%	18.2%	4.5%	1,000	1.6%	100.0%
Celtis (Hackberry)	900	1.3%	16.7%	27.8%	44.4%	11.1%	900	1.3%	88.9%
Sorbus (Mountain Ash)	700	1.0%	92.9%	0.0%	7.1%	0.0%	700	1.0%	85.7%
Japanese Lilac	400	0.7%	100.0%	0.0%	0.0%	0.0%	400	0.7%	100.0%
Salix (Willow)	400	0.7%	22.2%	33.3%	22.2%	22.2%	400	0.7%	88.9%
Thuja (White Cedar)	500	0.7%	40.0%	50.0%	10.0%	0.0%	500	0.7%	100.0%
Juniperus (Red Cedar)	400	0.6%	0.0%	100.0%	0.0%	0.0%	400	0.6%	100.0%
Aesculus (Buckeye)	300	0.5%	0.0%	42.9%	42.9%	14.3%	300	0.5%	71.4%
Prunus (Plum)	300	0.5%	28.6%	71.4%	0.0%	0.0%	300	0.5%	100.0%
Exotic/Other	200	0.4%	80.0%	20.0%	0.0%	0.0%	200	0.4%	100.0%
Robinia (Black Locust)	200	0.4%	20.0%	40.0%	20.0%	20.0%	200	0.4%	60.0%
Abies (Fir)	200	0.3%	50.0%	50.0%	0.0%	0.0%	200	0.3%	100.0%
Amelanchier (Juneberry)	200	0.3%	100.0%	0.0%	0.0%	0.0%	200	0.3%	75.0%
Boxelder	200	0.3%	50.0%	25.0%	25.0%	0.0%	200	0.3%	100.0%
Ostrya (Ironwood)	100	0.2%	33.3%	66.7%	0.0%	0.0%	100	0.2%	100.0%

Table 2. Tree condition by size class.

Size Classes ++	Population	Size Class %	Healthy	Dieback	Discolor	Both	Dead
Small (1" - 4.9")	21,800	33.5%	95.3%	3.8%	0.9%	0.0%	0.0%
Medium (5" - 11.9")	24,400	37.5%	97.2%	2.2%	0.4%	0.0%	0.2%
Large (12" - 20.9")	14,500	22.2%	96.6%	3.4%	0.0%	0.0%	0.0%
Super (21" +)	4,500	6.9%	92.4%	7.6%	0.0%	0.0%	0.0%

The numbers above (both tables) do not include shrub-like trees (e.g. Arbovitae) or non-maintained areas such as vacant areas.

**Area within city limits is 4,869 acres. The Business & Residential area is 2,982 acres, of which 99.7% (2,973 acres) is considered Maintained while 0.3% (9 acres) is considered Non-Maintained.

DNR 2010 COMMUNITY TREE SURVEY
Top Ten Tree Genera for City of Northfield, Rice County
See numeric tables for complete survey results

- Acer (Maple), 25.0%
- Picea (Spruce), 17.5%
- Fraxinus (Ash), 14.9%
- Malus (Apple), 7.9%
- Betula (Birch), 6.7%
- Tilia (Basswood), 4.6%
- Pinus (Pine), 3.7%
- Quercus (Oak), 2.8%
- Ulmus (Elm), 2.6%
- Gleditsia (Honeylocust), 2.5%
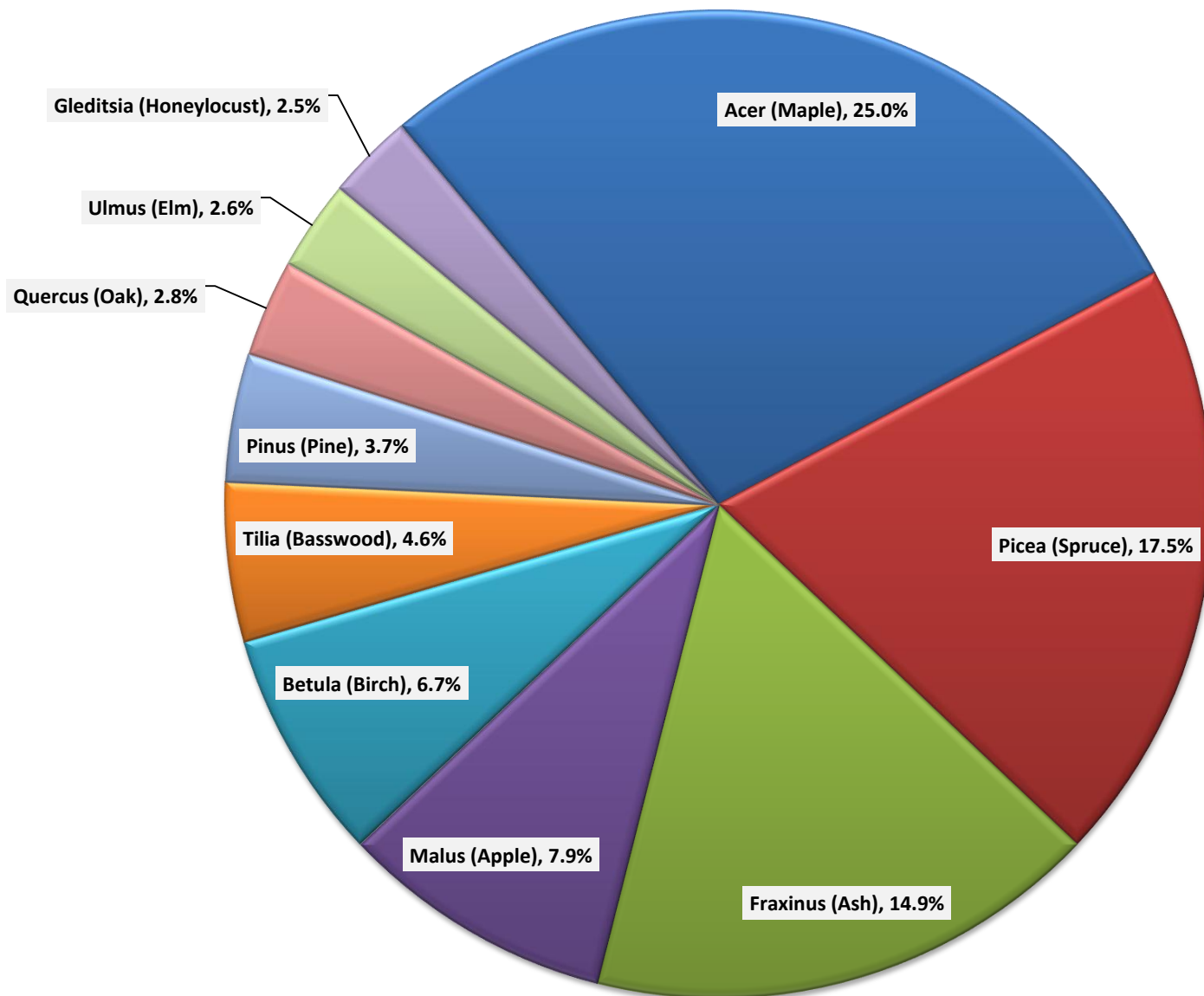
DNR COMMUNITY TREE SURVEY
Top Ten Genera in Minnesota

See numeric tables for complete survey results.

- Acer (Maple), 20.2%
- Picea (Spruce), 18.1%
- Fraxinus (Ash), 15.2%
- Malus (Apple), 7.6%
- Pinus (Pine), 6.4%
- Quercus (Oak), 5.5%
- Ulmus (Elm), 3.9%
- Betula (Birch), 3.8%
- Tilia (Basswood), 3.6%
- Populus (Poplar), 2.5%