

## ACER Dynamic Tree Report

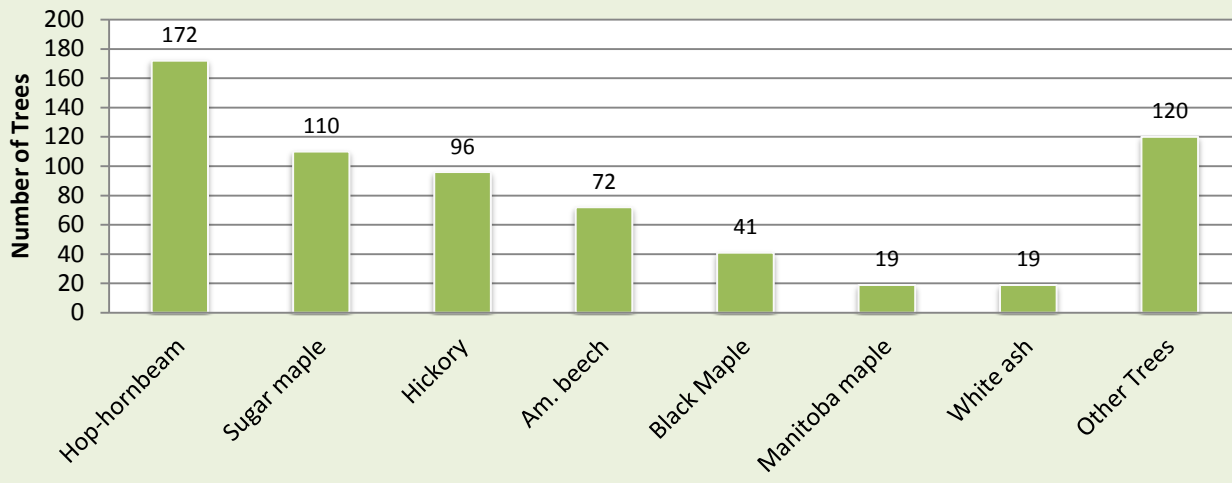
General Information			
<b>Plot Location/Name:</b>	Humber Arboretum Go Global Plot	<b>GPS:</b>	Lat: 43.724491 Long: -79.609284
<b>Plot Address</b>	205 Humber College Blvd., Toronto, Ontario, M9W 5L7	<b>UTM:</b>	Zone 17: Easting 612071 Northing 4842222
<b>Crew Members:</b>	UTSC graduate students (Amy Niao Chen, Sam Xing, Talent Hwang, Yafei Deng and Daniel J. Kim)		
<b>Study Date:</b>	May to August, 2013		
<b>Organization:</b>	UTSC, Humber Arboretum, ACER		
<b>Contacts:</b>	<b>Address:</b> 92 Lakeshore Rd. E., Mississauga, ON, Canada		
	<b>Name:</b> Daniel Jun Sun Kim	<b># / email:</b> aceracreinfo@gmail.com	
	<b>Address:</b>		
	<b>Name:</b>	<b># / email:</b>	
<b>Study Site Info:</b>	<b>Year Established:</b>	2001	<b>Area monitored (current study) (m<sup>2</sup>):</b> 10000
	<b>Site Description:</b>	Located about 150m south of Urban Ecology Centre. Most of Humber Arboretum had been owned by local farmers before the 80's. All of the American Elms were lost in the 80's due to Dutch Elm Disease, and most of American Beech were lost due to path construction damaging their roots.	
<b>Comments / Other information:</b>	Rapid increase in deer population in the past decade causing heavy browsing on young trees despite the use of deer fence. Increasing trend of invasive species such as Dog Strangling Vines and Garlic Mustard. 14.7% decrease in number of mature trees from 2002 to 2013. Only 1% of young trees observed in 2013 were hop-hornbeam. More information can be found here: <a href="http://www.acer-acre.ca/programs/go-global/humber-arboretum">http://www.acer-acre.ca/programs/go-global/humber-arboretum</a>		

Basic Analysis																					
<b>Number of Trees by DBH</b>	<b>Trees by DBH</b>																				
DBH	Trees	<table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th>DBH Class (cm)</th> <th>Number of Trees</th> </tr> </thead> <tbody> <tr><td>0-10</td><td>256</td></tr> <tr><td>10-20</td><td>168</td></tr> <tr><td>20-30</td><td>67</td></tr> <tr><td>30-40</td><td>50</td></tr> <tr><td>40-50</td><td>41</td></tr> <tr><td>50-60</td><td>18</td></tr> <tr><td>60-70</td><td>5</td></tr> <tr><td>&gt;70 (cm)</td><td>4</td></tr> </tbody> </table>		DBH Class (cm)	Number of Trees	0-10	256	10-20	168	20-30	67	30-40	50	40-50	41	50-60	18	60-70	5	>70 (cm)	4
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<b>Total</b>	<b>609</b>	<b>DBH Skewness: 1.512</b>																			
<b>Total Number of Trees:</b>	<b>649</b>	<b>Number of Identified Species:</b>	<b>18</b>																		
<b>Number of Trees per hectare:</b>	<b>649</b>																				
<b>Tallest Tree (Height):</b>	<b>Hickory (39.72m)</b>	<b>Most Common Tree:</b>	<b>Hop-hornbeam</b>																		
<b>Average Height (m):</b>	<b>13.48</b>	<b># of Hop-hornbeam:</b>	<b>172 (26.5%)</b>																		
<small>Only 487 trees were measured for height.</small>																					
<b>Thickest Tree (DBH):</b>	<b>Deciduous (Other) (94.3cm)</b>	<b>3 Most Common Trees:</b>	<b>Hop-hornbeam, Sugar maple, Hickory</b>																		
<b>Average DBH (cm):</b>	<b>18.07</b>	<b>These trees consist 58.2% of all trees.</b>																			
<small>Only 609 trees were measured for DBH.</small>																					

# ACER Dynamic Tree Report

## Basic Analysis

### Trees by Species



List of identified species:

'Am. beech' 'Balsam fir' 'Basswood' 'Black cherry' 'Blue beech' 'Bur oak' 'Eastern hemlock' 'Hickory' 'Hop-hornbeam' 'Manitoba maple' 'Red maple' 'Red oak' 'Sugar maple' 'White ash' 'White elm' 'Black Hawthorn' 'Black Maple' 'Downy Hawthorn'

## Carbon Sequestration

	Wood	Bark	Branches	Foliage	Total above ground	Carbon equivalent	CO <sub>2</sub> equivalent*
Total Dry mass (tons)	125.515	14.633	54.564	4.592	199.304	<b>99.652</b>	<b>365.724</b>

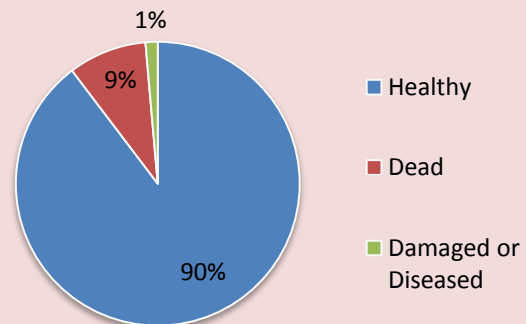
\*Estimation of how much carbon dioxide has been absorbed by all trees based on above ground biomass.

## Health

Stance		
Standing	Leaning	Prone
598 (92.1%)	51 (7.9%)	0 (0%)

Health Status			
Bark Damage	0 (0%)	Healthy	582 (89.7%)
Signif Top Breakage	4 (0.6%)	Dead	58 (8.9%)
Root Damage	0 (0%)	Alive	591 (91.1%)
Complete Girdling	0 (0%)		
Vandalism	1 (0.2%)		
Animal Browsing	1 (0.2%)		
Insect Infestation	4 (0.6%)		
Symp of Disease	0 (0%)		

### Tree Health Overview



## ACER Dynamic Tree Report

### Detailed Analysis

Common Name	Abundance		DBH		Basal Area	
	Count	Relative(%)	Mean (cm)	Skewness	(m <sup>2</sup> )	Relative(%)
Hop-hornbeam	172	26.50	12.57	3.764	3.4519	13.031
Sugar maple	110	16.95	13.42	2.523	2.9820	11.258
Hickory	96	14.79	33.76	-0.192	10.3123	38.931
Am. beech	72	11.09	16.85	0.695	2.3600	8.909
Black Maple	41	6.32	13.98	1.566	1.1349	4.284
Manitoba maple	19	2.93	6.39	1.528	0.0638	0.241
White ash	19	2.93	25.53	0.917	1.5467	5.839
Red maple	15	2.31	13.73	0.805	0.2881	1.088
Bur oak	13	2.00	40.21	0.116	1.7921	6.766
Downy Hawthorn	8	1.23	6.50	-0.910	0.0546	0.206
Eastern hemlock	7	1.08	6.38	1.482	0.0280	0.106
Black cherry	6	0.92	8.61	0.239	0.0381	0.144
White elm	3	0.46	20.35	1.721	0.1853	0.700
Blue beech	2	0.31	29.31		0.2699	1.019
Black Hawthorn	2	0.31	4.96		0.0039	0.015
Balsam fir	1	0.15	25.75		0.0521	0.197
Basswood	1	0.15	20.00		0.0314	0.119
Red oak	1	0.15	47.59		0.1779	0.672
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Other / Unidentified	61	9.40	10.37	3.239	1.7158	6.478
<b>All Trees:</b>	<b>649</b>	<b>100</b>	<b>18.07</b>	<b>1.512</b>	<b>26.4888</b>	<b>100</b>