



Chautauqua Tree Inventory Report

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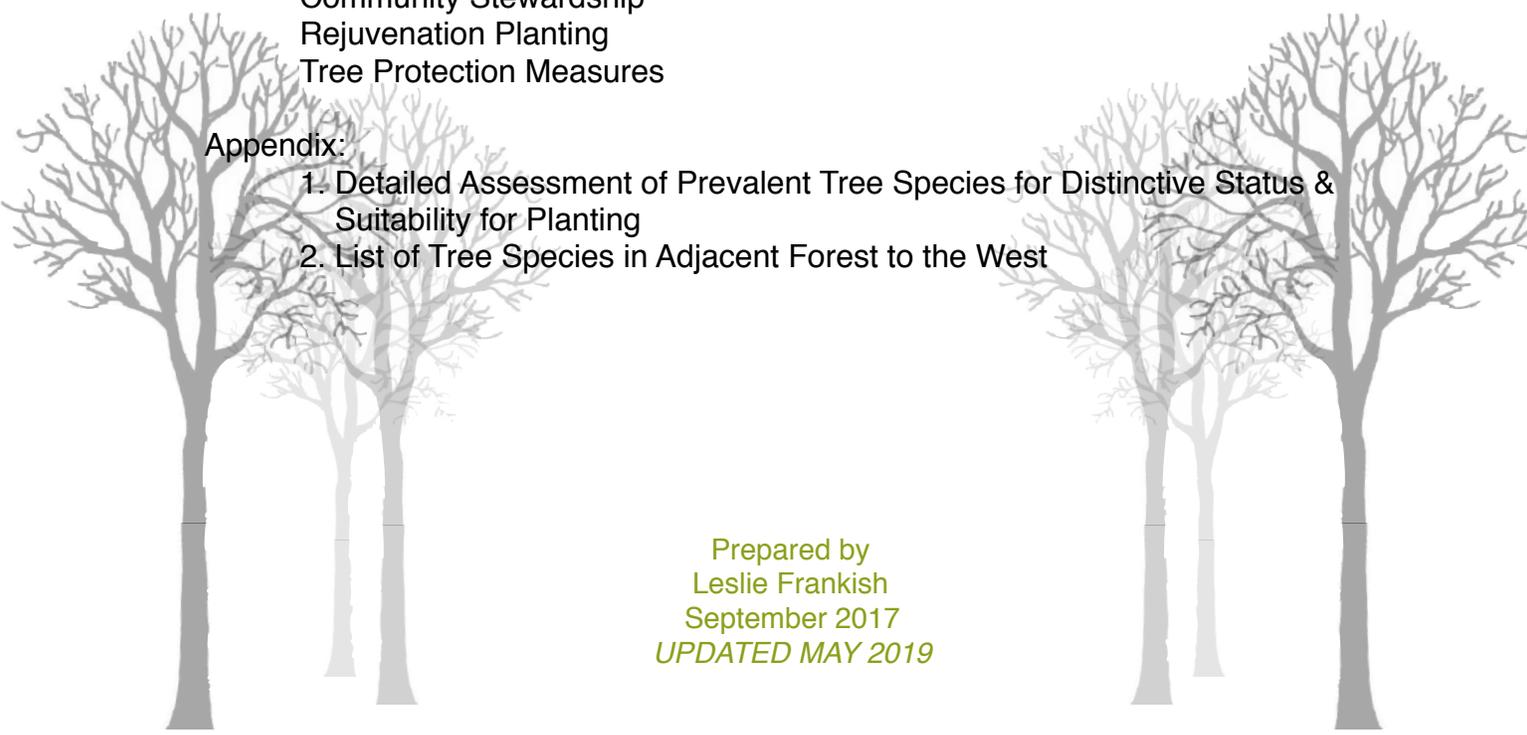
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Prepared by
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September 2017
UPDATED MAY 2019

Chautauqua Tree Inventory Report

Inventory Process & Parameters

Purpose

To determine the make up of The Great Chautauqua Tree Canopy with the premise "Understanding what is growing here now, will help ensure it is still there for future generations to enjoy."

Team

Recording & processing by volunteer Chautauqua residents Leslie Frankish and Holmes Hooke.
Assisted by volunteer Chautauqua residents Christine Earl and Kevin Collins.
Tree Identification consultations by JB Hopkins.

References

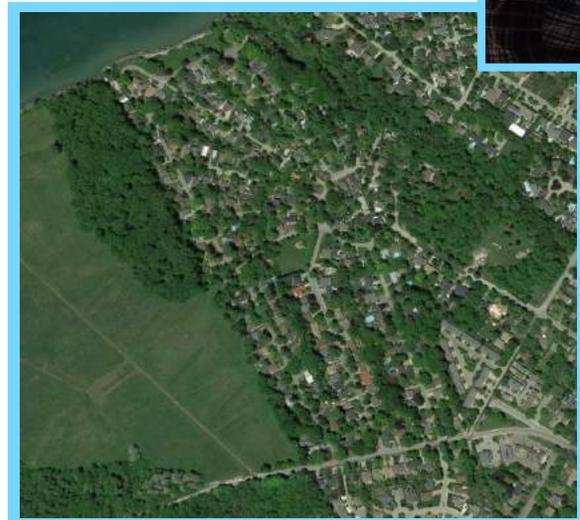
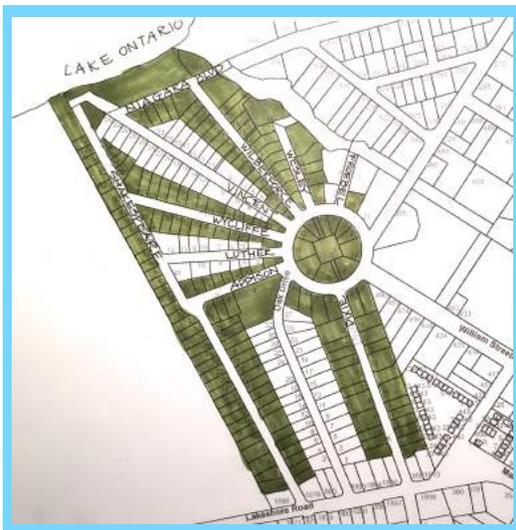
"Tree Inventories" by The International Society of Arboriculture
"Trees in Canada" by J.L. Farrar
"Manual of Woody Landscape Plants" by M.A. Dirr

Limitations

A significant number of the trees are on private property. So as not to trespass, all information was gathered from the road edge. Therefore:
-The Inventory included all front yard trees and any back yard trees visible over the roof.
(The majority of homes are 1 story, therefore, mature trees were easily seen.)
-Locations of trees were estimated in relationship to the road edge and house.
-Age was simplified to 2 categories...Canopy (the mature trees) & Canopy Future (the young trees).
-Height & Dripline measurements were extrapolated using the scale figure in the photographs and verified with a sample measuring utilizing the 45/90 degree siting method.

Coverage

201671% of properties plus both parksnoted in green on the map below.
2017.....the remaining 29%.
At 100% coverage the 'sampling' should adequately absorb any vagaries of process.



Information Recording Method

For each tree: a photographic record was made and an estimation of the tree's location was plotted on a site plan. Tree identity letters were assigned to correlate the two.

A powerpoint presentation was created as a documentary of the endeavour. Viewing can be arranged by contacting Leslie Frankish.

Chautauqua Tree Inventory Report

Inventory Records

Map

Street maps, including property lines & house footprints, were extrapolated from the 2006 Watermain Replacement survey drawings and the online Niagara Region Navigator maps. Tree locations are indicated by an approximation of their driplines.

Note: Driplines were simplified to 3 classes:

Major Canopy ~60' dia., Midstory ~30' dia. and Ornamental ~15' dia. The map includes data from both parts of the inventory: 2016 & 2017.

Please see Hardcopy Map Package.



Picture Archive

The digital pictures are organized by property addresses.

For each property: An overview shot of the front yard and a close-up of the house number.

For each tree: A snap shot of the tree's identity letter, followed by a full height shot with scale figure, and then close-ups of bark & leaves.

Note: Due to the uneven arrangement of houses on the streets the properties are not always arranged in sequential order.

The archive covers both parts of the inventory: 2016 & 2017

Please see Digital Files.



Catalogue

A property by property spreadsheet lists the particulars of each tree.

Categories:

- Species
- Type (Canopy, Understory or Ornamental)
- Age (Canopy or Canopy Future)
- Height estimate
- Dripline estimate

Also included:

- Landscape information such as hedges, lawns, hard surfaces etc.
- House type

Note: The Catalogue only covers the 2016 portion of the inventory.

Please see Digital Spread Sheet.

Species	Common Name	Category	Height	Dripline	DBH
ACER FRAXINUS	Red/Green Maple	Canopy	80'	80'	
QUERCUS RUBRA	Red Oak	Canopy	30'	18'	
MAGNOLIA SCULPTURATA	Magnolia var1	Understory	15'	8'	
HEBESUS GROVE	Rose of Sharon	Ornamental	15'	8'	
VIORNIUM 1117	Viburnum	Decorative	8'	0'	
CATALPA SPECIOSA	Catalpa	Canopy	20'	28'	
ditto	Catalpa	Canopy	20'	28'	
MAGNOLIA SCULPTURATA	Magnolia	Understory	15'	18'	
ditto	Magnolia	Understory			
PAUSIS SYLVESTRIS x 5	European Beech	Canopy	30'	18'	
MALUS FLYWHEELER	Crab Apple	Understory	25'	18'	
PICEA GILVICA	White Spruce	Canopy	20'	18'	
HEBESUS GROVE	Rose of Sharon	Ornamental	18'	8'	
ALNUS GLUTINOSA GROW	European Alder	Understory	20'	15'	
ditto	European Alder	Understory			
PRUNUS SYLVESTRIS	Sweet Plum	Canopy	30'	18'	
CRATAEGUS 1117	Hawthorn	Understory	20'	18'	
QUERCUS RUBRA	Red Oak	Canopy	18'	18'	
SYRINGA VILGARENSIS	Common Lilac	Ornamental	8'	0'	
CERCIS CANADENSIS	Redbud	Understory	8'	0'	
PICEA GILVICA	White Spruce	Canopy	30'	28'	
VIORNIUM	Viburnum	Ornamental	8'	4'	
CORYLIS AMERICANA	American Hazel	Understory	10'	18'	
QUERCUS RUBRA COCAINEA	Scarlet Oak	Canopy	8'	4'	
ABE GALSAMEA	Balkan Fir	Understory	20'	12'	
CERCIS CANADENSIS	Redbud	Understory	8'	0'	
HEBESUS GROVE	Rose of Sharon	Ornamental			
PICEA GILVICA	White Spruce	Canopy	20'	28'	
MAGNOLIA STELLATA	White Star Magnolia	Ornamental	8'	0'	
HEDGES					
None					
HILLS	Emerald Cedar				
SMES					
	Climbing Hedgerows				
	Hedges				

Inventory Findings

The bulk of the inventory and all analysis of data took place with the 2016 gathering of information.

In June 2017, after town council gave approval to develop a Chautauqua specific Community Tree Plan it was decided to record the remaining 29% trees. The 2017 portion of the inventory completes the list of species & their numbers present in the canopy. However, all statistics and extrapolations mentioned in subsequent reports, presentations and Tree Plans are based on the 2016 results.

Chautauqua Tree Inventory Report

Inventory Findings_{continued}

Tree Species in Chautauqua 2016

The following is the final tally from the 2016 portion of the Tree Inventory. The parameters for assembling this information are explained in the Inventory Report. This is an unedited accounting. Please refer to the Recommended Planting lists for the species that have been assessed for replanting suitability.

Major Canopy Trees.....Total 780

Over 20

96 Red Oak	<i>Quercus rubra</i>	78 Canopy	18 Canopy Future
91 White Oak	<i>Quercus alba</i>	88 Canopy	3 Canopy Future
89 White Ash	<i>Fraxinus americana</i>	76 Canopy	13 Canopy Future
59 Norway Spruce	<i>Picea abies</i>	All Canopy	
55 Black Walnut	<i>Juglans nigra</i>	28 Canopy	27 Canopy Future
55 Sugar Maple	<i>Acer saccharum</i>	44 Canopy	11 Canopy Future
36 Silver Maple	<i>Acer saccharinum</i>	31 Canopy	5 Canopy Future
35 Alder	<i>Alnus</i>	All Canopy	Many seedlings
30 White Pine	<i>Pinus strobus</i>	All Canopy	
27 Blue Spruce	<i>Picea pungens</i>	25 Canopy	2 Canopy Future
26 White Spruce	<i>Picea glauca</i>	All Canopy	
25 Norway Maple	<i>Acer platanoides</i>	All Canopy	
22 Shagbark Hickory	<i>Carya ovata</i>	20 Canopy	2 Canopy Future
21 Northern Catalpa	<i>Catalpa speciosa</i>	8 Canopy	2 Canopy Future

Under 20

- 13 Manitoba Maple
- 12 Red Maple
- 11 Pin Oak
- 9 Scots Pine
- 8 each of Beech & Austrian Pine
- 7 Red/ Silver Maple
- 7 Colorado Spruce
- 6 Dawn Redwood
- 5 Elm
- 3 each of Chestnut, Swamp White Oak, Oak Hybrid & Balsam Fir
- 2 each of Weeping Willow & Larch
- 1 each of Cottonwood, Ginkgo, Bur Oak, Scarlet Oak & Tulip Tree

Understory Trees.....Total 210

- 58 White Cedar
- 33 Japanese Maple
- 17 Cherry
- 15 Magnolia
- 13 Birch
- 10 each of Flowering Dogwood, Eastern Redbud, Sumac
- 7 each of Crab Apple, Ornamental Fruit, Honey Locust, Linden
- 6 Hawthorn
- 3 Russian Olive
- 2 Butternut
- 1 each of Witch Hazel, Hornbeam, Katsura

Grand Total: 990 Trees

Chautauqua Tree Inventory Report

Inventory Findings continued

Tree Species in Chautauqua as of September 2017

The following is the final tally including both the 2016 & 2017 parts of the Tree Inventory. Combined, they cover 100% of the properties of Chautauqua and the two parks. The parameters for assembling this information are explained in the Inventory Report. This is an unedited accounting. Please refer to the Recommended Planting lists for the species that have been assessed for replanting suitability.

Major Canopy Trees.....Total 1054

108 Red Oak	<i>Quercus rubra</i>
105 White Oak	<i>Quercus alba</i>
122 White Ash	<i>Fraxinus americana</i>
75 Black Walnut	<i>Juglans nigra</i>
59 Norway Spruce	<i>Picea abies</i>
58 Sugar Maple	<i>Acer saccharum</i>
53 Norway Maple	<i>Acer platanoides</i>
52 White Spruce	<i>Picea glauca</i>
42 Alder	<i>Alnus</i>
40 Blue Spruce	<i>Picea pungens</i>
39 Shagbark Hickory	<i>Carya ovata</i>
39 White Pine	<i>Pinus strobus</i>
37 Manitoba Maple	
36 Silver Maple	<i>Acer saccharinum</i>
31 Northern Catalpa	<i>Catalpa speciosa</i>
22 Red Maple	
19 Pin Oak	
13 Beech	
11 each of Oak Hybrid, Columnar Oak & Austrian Pine	
10 Scots Pine	
9 Weeping Willow	
7 each of Red/ Silver Maple & Colorado Spruce	
6 Dawn Redwood	
5 each of Elm, Chestnut, Bur Oak & Swamp White Oak	
3 each of Balsam Fir, Larch & Tulip Tree	
1 each of Cottonwood, Ginkgo & Scarlet Oak	

Understory Trees.....Total 448

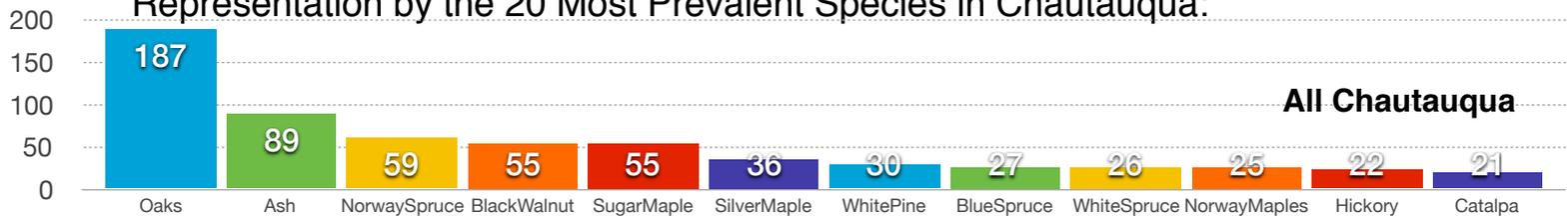
160 White Cedar
67 Japanese Maple
55 Honey Locust
29 Magnolia
25 Cherry
18 Flowering Dogwood
17 Birch
15 each of Eastern Redbud, Linden & Sumac
12 Ornamental Fruit
7 Crab Apple
6 Hawthorn
3 Russian Olive
2 Butternut
1 each of Witch Hazel & Katsura

Grand Total: 1502 Trees

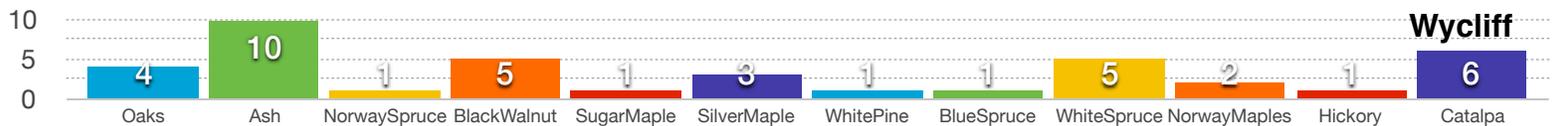
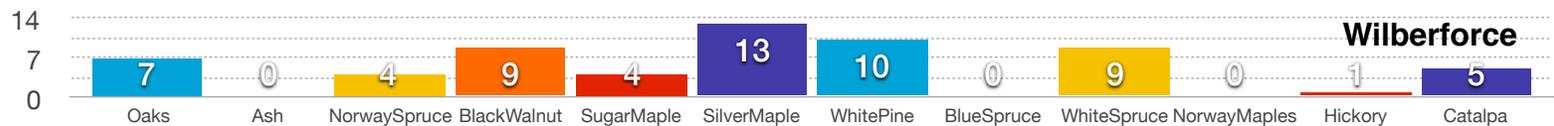
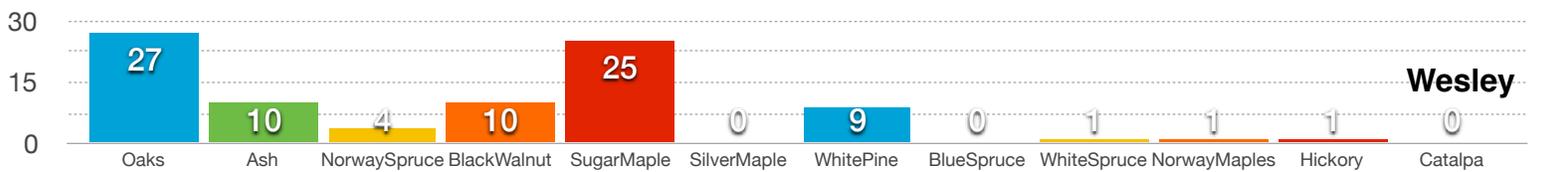
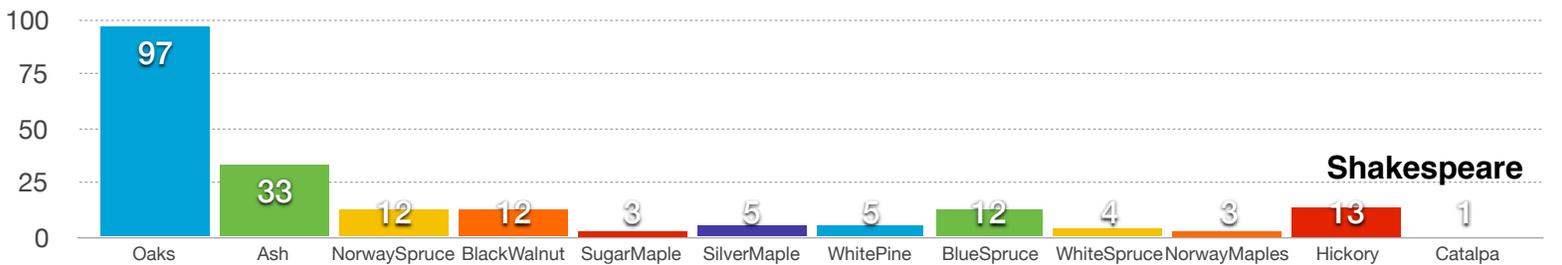
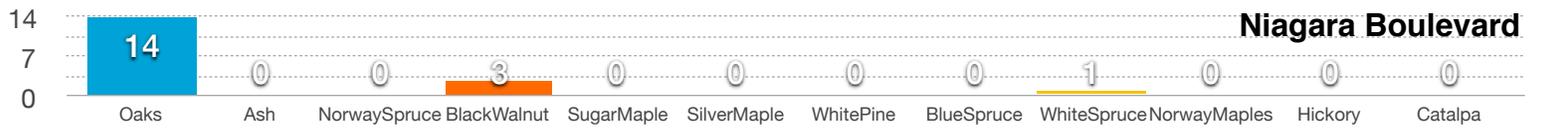
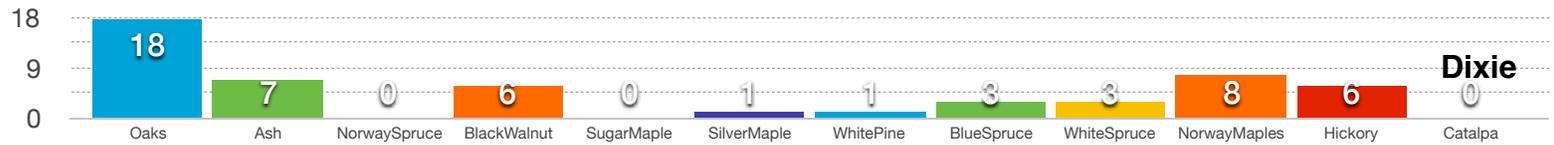
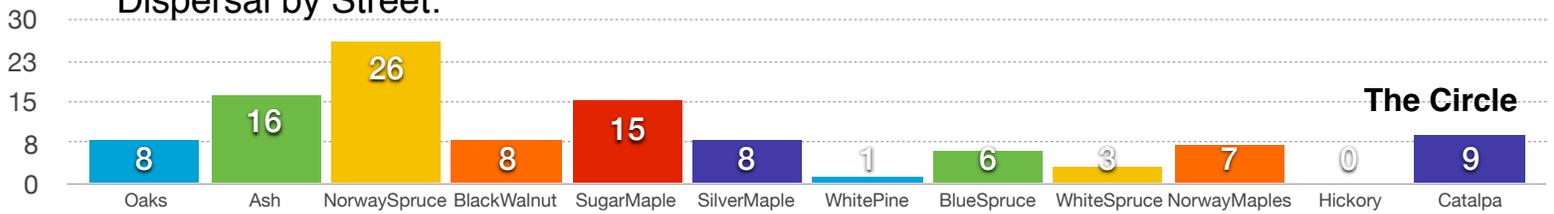
Chautauqua Tree Inventory Report

Inventory Findings continued

Representation by the 20 Most Prevalent Species in Chautauqua:



Dispersal by Street:



Chautauqua Tree Inventory Report

Inventory Conclusions

Examining the landscape of Chautauqua revealed the following:

Observing the ages of the trees revealed how the current canopy evolved ...its **historical layers**..

Studying the components of the canopy allowed us to identify that which creates its **distinctive beauty**.

And, analyzing the recent changes revealed the **threats to its continuance**.

Historical Layers

Modern day Chautauqua resides within the Carolinian forest region. Possibly originally densely forested, it evolved over time into a savannah...a type of forest that includes open field areas. Frequently flanked by denser forests the trees of savannahs are scattered about the grasslands in small and large stands. Judging by the species in the remaining forests that border Chautauqua this was an Oak Savannah. Evidence of the original savannah are our mature Red & White Oaks as well as Ash, Hickories, Black Walnuts, Sugar Maples & White Pines. (Note: not all Carolinian species are native to this particular area.)

Not requiring extensive clearing savannahs were ideal for settlement. In **early history** this area was part of Neutral Indian territory for over 7000 years. A nation known for their agricultural practices they may have cleared the land with controlled fires. In the **early 1800s** came the first European settler, William Crooks. Some clearing took place for him to farm the land but it is believed one White Oak escaped his axe. After the war of 1812 the farm was abandoned and the land left to fallow. The original savannah trees began to repopulate the area again.

Over the years the subsequent waves of settlement *added* onto the savannah. In the **late 1880s** came the first housing development: the Niagara Assembly for the Canadian Chautauqua, a Victorian resort. In amongst the re-establishing stands of Oaks a handful of Queen Anne cottages were built. The existing landscape was left mainly intact but a spider web of streets was laid over the savannah, and with it, some formal additions were added to the grassland. The newly built Amphitheatre was encircled with a Colonnade of native Sugar Maples. In the style of grand resorts one of the newly laid out streets, then called Wesley now known as Wilberforce, was planted with flanking Silver Maples to create a shady Promenade from the Amphitheatre Circle down to the lake. One of the re-establishing White Oaks was in the way of the proposed road's path, but, rather than cut it down, the road was built around the tree where it remained until the 1970s. One other



significant tree that was appreciated by the developers and left untouched is the White Oak at #10 Circle.... believed to be the sole surviving old growth tree.



With the **1920s to 1940s** came the Mississauga Beach Association's collection of summer cottages. The 7 grand Queen Anne cottages now had dozens of modest new neighbours, The new cottages were much smaller, each unique and their placements on the lots paid little attention to uniform layout. Sprinkled under the re-establishing savannah trees, the landscape additions were also modest. Flowering & scented shrubs & small trees were the 'cottagey' choice....Lilacs, Mock Orange, Rose of Sharon & Crab Apple. The only large trees evident from this period are the Catalpas.



With the **1960s** came the introduction of suburban year round residences. Developers built dozens of these houses, mostly bungalows, ranch or split levels, the scale a little bigger than the post war cottages but still with a sense of homes sitting within large green spaces. This imported architectural style came with imported landscape trends as well. In amongst the blousy cottage gardens and the random stands of now hundred year old savannah trees, appeared the uniform silhouettes of Blue Spruce, Norway Maples & pollard ornamentals. The fast growing Norway Spruce was another non-native 'builders choice'.

Chautauqua Tree Inventory Report

Inventory Conclusions continued.

As of 2000 Chautauqua was 'discovered' as very desirable real estate. New homes are now of a wide range of styles and sizes. As of 2017 only one empty, 'wild' lot remains. The idea of large open fields with quirky cottages sprinkled about has disappeared. Suburban lawns and many forms of hard surfaces have effectively 'tamed' the grasslands. The gardening craze at the turn of this century influenced nurseries to carry unparalleled choice. The result...a disparate range of plantings including many new species and engineered cultivars. Consistently however, were privacy hedges & Red Japanese Maples.

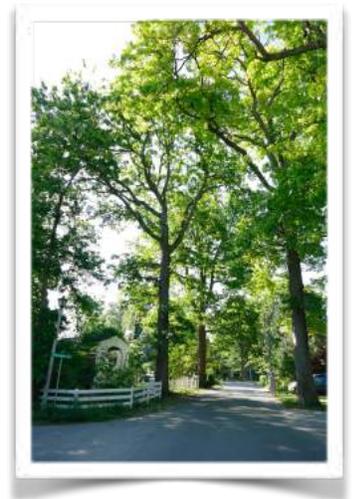
Up until the last decade the changes to the Chautauqua landscape were mostly additive and in the scheme of things, not very much at all. Luckily the original savannah trees have regrown, for it is they that mainly make up the Great Chautauqua Tree Canopy...the most distinctive attribute of modern day Chautauqua.

Distinctive Beauty

The canopy's distinctive beauty, however, is not just the result of a large volume of trees. The iconic vistas that make you pause are the result of a specific relationship between specific species. This unique harmony, created by a very limited palette of trees, results in a powerful 'genius loci'...a sense of place. The effect created is an unusual blend of cozy and uplifting. It is the reason the streets of Chautauqua are nicknamed the Cathedrals of the Everyday.

The uplifting effect is achieved by the signature form of the Oaks. The eye rushes up the soaring trunks and is rewarded by those languorous branches...elegant arms effortlessly holding aloft the leafy canopy. It is enchanting and soul stirring.

The cozy effect is created by the understory of 'cottagey' flowering shrubs and small trees which provide a comforting nest from which to view the majestic oaks. Remarkably, there are few mid size trees blocking the view. It is the strong contrast between the cozy and the uplifting that makes the big impact. It is an enchanting combination, a remarkable relationship that needs to be preserved. This is the distinctive beauty of the Chautauqua neighbourhood.



Threats to the Continuance of the The Great Chautauqua Tree Canopy

Of late, the changes to the Chautauqua landscape have shifted measurably to the subtractive. The distinctive beauty is under threat.

Historically, after the initial clearing for the Crookston farm, the stripping of land in this neighbourhood had been minimal. The cottages, large & small, deferred to the existing trees, sometimes even incorporating them. Modern house construction, however, is less inclined. Trees are now being cleared not only for the larger footprints of the houses but also because it is easier to build a house with the trees out of the way. The number of new houses are rising and the number of trees are decreasing.

As evidenced on Wilberforce Avenue, the number of trees removed for construction nearly equal the number of trees lost to disease and wind. In the last 5 years 19 major trees were lost.... 9 of these were cut down for house construction.

The accumulation of individual actions are having a significant impact on the greater streetscape. With our wealth of so many trees, their value is perversely lessened when the decision is made to chop them down. Calling it 'removal' and assuring oneself there will be lots of trees left is a specious justification.



Chautauqua Tree Inventory Report

Inventory Conclusions continued.

A chopped down tree is an obvious result of tree destruction for new construction. Less obvious but equally fatal is the delayed death due to root compaction.

On our small lots the place of choice to store heavy equipment, building materials and tons of excavated fill is under the trees...on top of their root systems... effectively suffocating them.

Pictured here is one of the surviving
Historic Wilberforce Promenade Trees:

Left: During the Inventory. Below: 3 months later.



Pictured here
is one of the
Heritage White
Oaks of
Shakespeare
2017



It is evident that age, disease, weather, and now, construction account for the losses in the canopy. The statistics revealed by the inventory are disturbing:

Of the 990 trees catalogued in 2016.....

the 89 Ash will be gone in the next couple of years

the 36 1880s Silver Maples are already past their estimated life span

& approximately 80 Red Oaks, left to grow in the 1880s, are also nearing their lifespan.....

....this totals 205 trees less in the canopy.

If, as is evident on Wilberforce, a nearly equal number of trees will be cut down for construction, it is conceivable that approximately 400 trees will be gone in the next 10 years. A quarter of the total trees.

With this catastrophic thinning, the treasured historic landscape of this neighbourhood will be decimated.

Compounding the effects of this thinning of the canopy is another startling discovery: there is no evidence that any significant replanting has occurred.

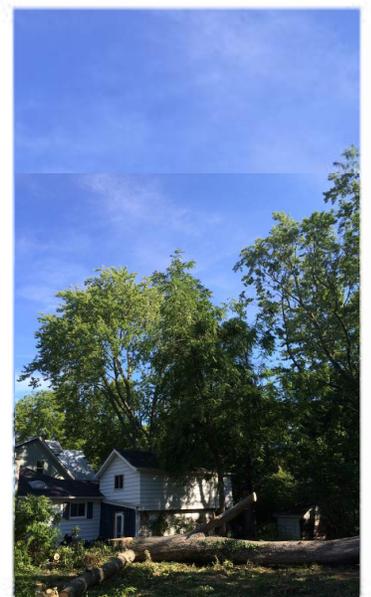
The disturbing statistic: Of the 187 Oaks catalogued only 21 are young trees.....only 21 to eventually take over for 166 mature heritage Oaks.

Also, of the 67 properties on Shakespeare, the street with the majority of the Oaks, there is no evidence of any Red or White Oaks having been planted to ensure the future of the canopy. 0 Canopy Future trees. The hallmarks of the canopy are becoming the victims of a misguided assumption they are a permanent fixture.

Further compounding this, the few trees that are being planted are not necessarily contributing to the unique quality of our distinctive landscape.

Homeowners are predominantly planting decorative ornamentals that will mature in their lifetime. At the time of our Inventory, only 1 of the 9 trees recommended in the current municipal Street Tree Guideline for Niagara on the Lake was capable of recreating The Great Chautauqua Tree Canopy.

The threat to the canopy is identified and it is clearly a double edged problem..... escalating thinning compounded by insufficient or inappropriate replanting.



Chautauqua Tree Inventory Report

Recommendations

The goal of the inventory endeavour has been met. We now understand what is growing here.....all the unique features that create the distinctive Great Chautauqua Tree Canopy. The data collected in the inventory is the first step in crafting a sensible and meaningful blueprint for the future.

Having identified the threats to the canopy, the following are a set of goals recommended to help ensure it endures for future generations to enjoy. (The entries in italics are those measures already put into effect as of August 2017).

1. Community Tree Plan

To rejuvenate the canopy, it is not enough to just plant a tree. To recreate the *harmonious* Chautauqua Tree Canopy, it needs to be the right tree. To make a focused effort with productive results, all the various stakeholders....municipal and private residents alike....and, any related legislations, need to follow one plan.

A Community Tree Plan identifies the distinct qualities to be protected and ensures appropriate trees are planted for the future. For any Community Tree Plan to be effective, however, the Town needs to sanction it.

Once the Community Tree Plan is in place all municipal plantings should contribute to the harmony of the canopy (*On June 12th 2017 we sought and gained unanimous approval from the town council to develop a Chautauqua specific Community Tree Plan. Based on the Inventory findings, our recommendations for the Chautauqua Community Tree Plan are attached to this report.)*

2. Community Stewardship

The responsibility for the trees, however, should not and cannot just fall on the shoulders of government. For any Community Tree Plan to be successful, the residents need to embrace it as well. Once the Tree Plan has been sanctioned by the town, a means of sharing the information with the neighbourhood is required. Also, to further engage a stewardship role, tree awareness activities and initiatives need to be developed.

Once informed there is a better chance that private plantings will contribute to the harmony of the canopy (*The development of a website is underway to provide information about our historic tree canopy and the details of the Chautauqua Community Tree Plan. myChautauqua.ca is due to launch in the spring of 2018.)*

3. Rejuvenation Planting

With the Community Tree Plan identifying the appropriate trees to plant, rejuvenation can begin. To make up for lost time significant planting programs are needed and, for meaningful restoration to take place, the combined efforts of Town and residents are essential.

(Ideally the Oak rejuvenation should be with the progeny of our existing Heritage Oaks. To that end we began to rescue seedlings....72 to date. Anxious to get the rejuvenation planting underway we sought funding from government & private sponsors. Attached to this report is our proposed Chautauqua Oaks Replanting Plan

UPDATE 2019: *Rejuvenation planting of Chautauqua began in the spring of 2018. 82 trees were planted on 2 streets. Niagara College also came onboard to harvest and grow the progeny of our historic trees. There will now be a consistent and continuous crop of Heritage Chautauqua Oaks to plant the rest of the streets and infill for perpetuity.)*

4. Tree Protection Measures

A Community Tree Plan identifies the distinct qualities to be protected and ensures appropriate trees are planted for the future but, to protect the existing trees, a municipal protection bylaw is required. The tree canopies of our neighbourhoods need a 'canopy of protection'.

We cannot prevent old age and extreme weather damage to the canopy but we can prevent unnecessary removal and insensitive abuse. As mentioned earlier, the accumulation of individual actions is having a significant impact on the canopy of the whole neighbourhood. A community wide monitoring is needed before our treasure is whittled away one property at a time. Proactive protection is needed for the distinctive trees that make up all our historic landscapes.

The combined forces of a Tree Protection Bylaw and a Master Plan with community specific sensitivity is essential for the longevity of the distinctive, magnificent tree canopies of Niagara on the Lake.

(As of this report sadly, amazingly, the historic trees of Niagara On The Lake are still in want of a Tree Protection Bylaw....

UPDATE 2019: *A tree protection bylaw was passed in 2018 and advocacy in underway to ensure compatibility with the Chautauqua Community Tree Plan)*

Chautauqua Tree Inventory Report

Appendix 1

Prevalent Species Assessed for Distinctive Status & Planting Suitability

The White & Red Oaks are the foundation of the Chautauqua Tree Canopy...its history and beauty....and as such should remain the predominant tree. The Oak progeny, however, are not naturally finding a welcoming environment to begin their germination process. The inventory statistics show that over 80% of properties have lawns ...this is no longer a woodland floor. Unlike the Black Walnuts with their support team of squirrels, the Oaks need our help to maintain their preeminence in the canopy.

The findings of the inventory were employed to identify which other species are companionable to the iconic Oaks, contributing to the distinctive beauty of the Chautauqua Tree Canopy and are, therefore, recommended for future planting.

The following criteria was applied to those species currently prevalent in the canopy (those with 20 or more representatives):

1 Compatible to the Oak's habitat. Carolinian definitely, but only those species native to this Oak Savannah version of the Carolinian forest.

2 Compatible to residential land use. Able to thrive in current growing conditions including compatibility with human settlement...this is no longer a woodland.

3 Representative of the historical development of the neighbourhood. As an *urban forest* all historical layers...native & man-made.... must be recognized equally. (Past choices that have proven over time to be detrimental, however, will be 'weeded out' by application of this criteria.)

4 Complement the strong Sense of Place epitomized by the most arresting feature of Chautauqua.....the epic scale and artfully organic beauty of the heritage Oaks....an iconic insouciant elegance.

5 Long lived, healthy species that are also conducive to the health of other Trees & animals. Enduring species with no known disease issues.

Canopy Trees.....in order of prevalence in the canopy as of 2016

96 Quercus rubra / Red Oak. 78 canopy. 18 canopy future.

and.

91 Quercus alba / White Oak. 88 canopy. 3 canopy future.

Current age/Potential Age: White Oak up to several hundred years old.

Red Oak up to 150 years

Historical Significance: Most are self seeded from the original savannah.

They are the predominant trees of modern day Chautauqua and

are the significant component of the Cathedrals of the Everyday.

A number of these have been identified as Distinctive Landmarks.

Thriving in Current Conditions: Tough trees that can survive heat & heavy clay soil....especially the Red Oak.

The White Oak however need room for their roots...too much hardscaping & construction root severing will compromise them.

Disease Free: Yes

Companionable to Residents: Nut dispersal is not yearly

Carolinian: Yes

Native: Yes

Recommended: Yes, Yes, Yes, Yes.

89 Fraxinus Americana / White Ash. 76 canopy. 13 future canopy.

Current age/Potential Age: Up to 200 years old.

Historical Significance: Some are original savannah self seeded & some were planted as street trees.

Thriving in Current Conditions:

Disease Free: No. These 89 trees will be lost in the next few years.

Companionable to Residents: Yes

Companionable to Other Trees: Yes

Naturally beautiful: Yes

Carolinian: Yes

Native: Yes

Recommended: Sadly, No

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59 Picea abies / Norway Spruce. All are canopy.

Current age/Potential Age: All are about 60 years...planted in the 1960s

Historical Significance: Planted as windbreak/walls in Chautauqua Park & along Palatine and, as feature trees in new housing development of the 60s

Thriving in Current Conditions: No. Temperature is too warm = ragged appearance.

Disease Free: .

Companionable to Residents: Footprint too large for small lots.

Companionable to Other Trees: .

Naturally beautiful: When struggling they get a very ragged appearance

Carolinian: No

Native: No

Recommended: No

55 Juglan nigra / Black Walnut. 28 canopy. 27 canopy future

Current age/Potential Age: Range of ages....1 year up to 150 years old.

Historical Significance: Member of original savannah.
Several are on the 'Famous Residents' register.

Thriving in Current Conditions: Yes

Disease Free: Yes

Companionable to Residents: Prodigious nuts

Companionable to Other Trees: No. Juglanic acid protects their space but threatens the livelihood of others.

Naturally beautiful: Stately form & spectacular fall colour makes this tree a valuable tree in our canopy.

Carolinian: Yes

Native: Yes

Recommended: This species presents a conundrum. The inhospitable root secretion would deem them not recommended but the squirrels do a very effective job of replanting and, therefore, the Black Walnut will always be represented in the canopy. Once they achieve mature state they are spectacular trees. Therefore, they deserve distinctive status & protection.

55 Acer saccharum / Sugar Maple. 44 canopy. 11 canopy future.

Current age/Potential Age: Circle trees 140 years old. Park trees 35 to 40 years old.
Can be up to 200 years old.

Historical Significance: Some are self seeded members of the original savannah.
The Circle ones were part of 1880 Chautauqua Amphitheatre landscaping.
The Colonnade of the cultivar 'Green Mountain' was planted by the town along the edge of Chautauqua Park after the removal of Harmony Hall in the 1990s.
On Wesley they are the understory growth for the Red Oak grove.
Many are on the 'Famous Residents' list.
They are the national tree of Canada & a stylized version of the leaf graces our flag.

Thriving in Current Conditions: Yes

Disease Free: Yes

Companionable to Residents: Yes

Companionable to Other Trees: Yes

Naturally beautiful: Fall colour is spectacular! Until mature, the form is characterized by a large globular crown on a small trunk. This rigid formality is not a great companion to the serpentine branches & stately trunks of Oaks

Carolinian: Yes and evident in natural wooded areas.

Native: Yes

Recommended: Yes, but caution against the planting of them as solo trees right in the middle of a lot. An asymmetrical planting of this formal tree will better suit the ambiance of Chautauqua.

Chautauqua Tree Inventory Report

36 Acer saccharinum / Silver Maple. 31 canopy. 5 canopy future.

Current age/Potential Age: Approximately 140 years old. Limit is usually 130 years.
Historical Significance: Member of the original savannah & still in evidence in rifle range forest.
Planted as the Promenade trees for the 1880 Chautauqua.
The surviving members are on the "Famous Residents" list.
Thriving in Current Conditions: Struggling. As a weak tree they do not survive winds well.
Disease Free:
Companionable to Residents: No longer recommended by many municipalities.
Companionable to Other Trees: Greedy roots.
Naturally beautiful: Yes
Carolinian: Yes
Native: Yes
Recommended: No for street trees, but all surviving ones deserve distinctive status & protection.
Yes for protected areas on private property

35 Alnus / Alder. All canopy but likely seedlings everywhere.

Current age/Potential Age: Up to 75 years. Very fast but weak
Historical Significance: Distinctive groves have developed along 4 mile creek.
Thriving in Current Conditions: Yes
Disease Free: .
Companionable to Residents: .
Companionable to Other Trees: Invasive and self seeding
Naturally beautiful: As a grove, yes but as a solo rigid.
Carolinian: No
Native: No
Recommended: No

30 Pinus alba / White Pine All canopy.

Current age/Potential Age: Up to 200 years old.
Historical Significance: Member of original savannah and forest.
Several are on the Famous Residents list.
The tree of Ontario and a Canadian icon thanks to The Group of 7.
Thriving in Current Conditions: Not when abused.
Disease Free: Yes
Companionable to Residents: Yes. Grow fast when young.
Companionable to Other Trees: Yes
Naturally beautiful: Response to prevailing winds creates unique sculptures therefore perfect for shoreline setting.
Eventual high limbed very companionable to Oaks.
Foliage colour and texture complement Oaks.
Carolinian: Yes
Native: Yes and evident in remainder of forest
Recommended: Yes, but best planted in separated threes to avoid solo flagpole effect.

27 Picea pungens / Colorado Blue Spruce.

Current age/Potential Age: 50 to 60 years old.
Historical Significance: All but 2 are planted with 1960/70's homes. Iconic fad tree of 1960s.
Thriving in Current Conditions: .
Disease Free: .
Companionable to Residents: .
Companionable to Other Trees: .
Naturally beautiful: Rigid, formal form is more suited to urban suburban settings.
Carolinian: No
Native: No. Imported trend.
Recommended: No

Chautauqua Tree Inventory Report

26 *Picea glauca* / White Spruce

Current age/Potential Age: Range. Up to 200 years old.
Historical Significance:
Thriving in Current Conditions: Unlike most conifers they withstand clay soil.
Disease Free: Yes
Companionable to Residents: Compact columnar form well suited to smaller lots. Not too slow.
Companionable to Other Trees: Yes
Naturally beautiful: Yes. Darker blue green offsets deciduous foliage well.
Columnar form complements strong verticals of Oak trunks.
Carolinian: Yes
Native: Yes
Recommended: Yes.

25 *Acer platanoides* / Norway Maple

Current age/Potential Age: .
Historical Significance: Fad tree of 1960s. Burgundy cultivar late 1900's.
Thriving in Current Conditions: No
Disease Free: .
Companionable to Residents: No longer recommended by many municipalities.
Companionable to Other Trees: Invasive.
Heavy shade & root secretions create an inhospitable environment.
Naturally beautiful: No. Heavy rigid form promising of symmetry but usually just off.
Carolinian: No
Native: No.
Recommended: No

22 *Carya ovata* / Shagbark Hickory & *Carya lacinoisa* / Shellbark Hickory 20 canopy. 2 future.

Current age/Potential Age: Up to 200 years.
Historical Significance: Member of original savannah.
Thriving in Current Conditions: Yes
Disease Free: .
Companionable to Residents: Prodigious shell fall out. Slow.
Companionable to Other Trees: .
Naturally beautiful: Very distinctive bark. Shellbark has particularly beautiful form.
Carolinian: Yes
Native: Yes
Recommended: Yes, especially the Shell Bark.

21 *Catalpa speciosa* / Northern Catalpa

Current age/Potential Age: .
Historical Significance: Representative of prewar cottage era.
Thriving in Current Conditions: Yes
Disease Free: Yes
Companionable to Residents: Bean casings are easier to pick up than smaller casings.
Companionable to Other Trees: Yes
Naturally beautiful: Yes. Branching patterns great companion to Oaks as are the large light green leaves.
A slight sense of whimsy seems very Canadian to my eye.
Carolinian: No but has naturalized.
Recommended: Yes. As a very fast growing tree they will bridge the huge gaps imminent in the canopy due to the tardy replanting of the Oaks.

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Understory Trees

This pertains only to homeowners as no understory trees are recommended for road side plantings.

Of the most prevalent Understory Trees, those that are Carolinian *and* savannah natives *and* of a complementary form to the Oaks..... the recommended Understory trees are.....

Cornus florida/Flowering Dogwood

Cercis canadensis/Redbud

Rhus typhina/Sumac.

...the multi stem version of these is preferable for creating the cozy nest aspect.

Chautauqua Tree Inventory Report

Appendix 2

Tree Species in Adjacent Forest to the West

Major Canopy Trees:

Red Oak...predominant

White Oak

Swamp White Oak

Pin Oak

Red Maple...predominant

Sugar Maple

White Pines

Black Walnut

Hickories

White Ash

Black Cherry

Hop Hornbeam

Understory:

Witch Hazel

Red Bud

Flowering Dogwood

Sumac

Note: The average age of the canopy trees was guesstimated at 160 years old. This is in keeping with premise the land was cleared for farming in the mid 1800s and then left to naturalize towards the end of that century.