Woodland Elementary School - Northern Red Oak

Woodland Elementary School

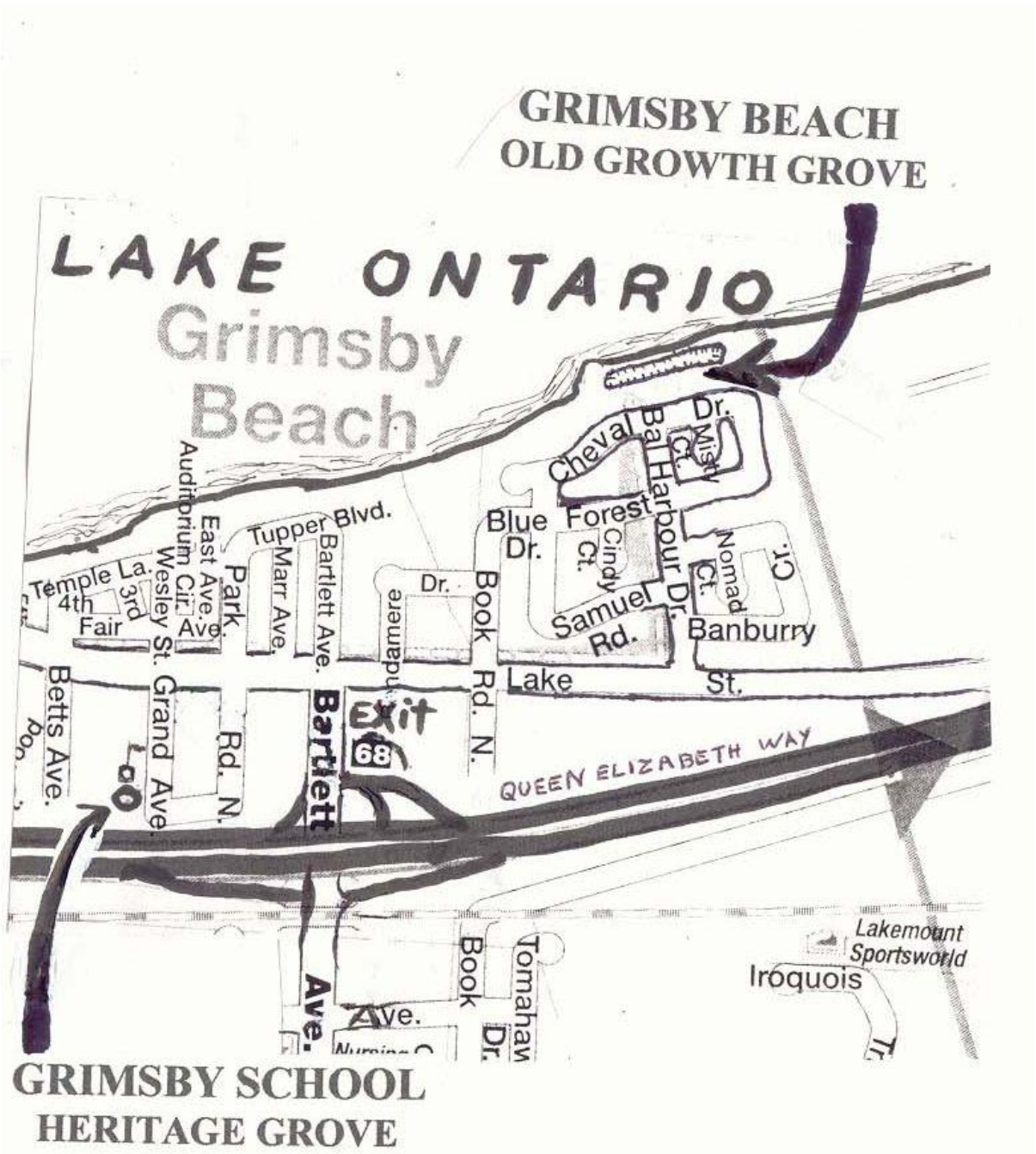
Beamer's Falls Gorge

Only a 1-acre remnant of Old growth Forest still survives in Beamer's Falls Gorge due to aggressive logging in the early 1900s. This contrasts with the 6 other waterfall gorges (west of Niagara Gorge) surveyed by this project. It is located on the bottom of the gorge and is dominated by Old Growth Hemlock and Beech, with scattered Sugar Maple.

Puzzled as to why the gorge was not filled with ancient forest as the other gorges were, some exploration revealed the answer: an old logging road on the opposite side of the creek that was laboriously constructed all the way into the gorge. It demonstrates that one of the primary reasons why Old Growth survives today is called "historical luck and happenstance." One 19th century land owner may have been more ambitious or in need of revenues than another, while someone else may (as many actual examples have shown) have had a wife who insisted that her husband not cut the trees of her favorite forest.

In any case, this and the newly discovered ancient broadleaf forest on Grimsby Point directly above, complement the famous ancient cliff-dwelling White Cedars and Beamers Falls, enhancing this site that is already one of Ontario's premier scenic treasures.

Old growth Tree Data:	Age (years) Range	Diameter Range	Comment
Hemlock	180-240	18-32"	Most common old growth tree
Beech	180-225	18-30	Most common old growth tree
Sugar Maple	150-200	20-32"	


GRIMSBY BEACH
OLD GROWTH GROVE
LAKE ONTARIO
Grimsby
Beach
Cheval
Bal Harbour Dr.
Misty Ct.
Blue Forest Dr.
Cindy Ct.
Nomad Ct.
Ct.
Samuel Dr.
Rd.
Banburry
Tupper Blvd.
Auditorium Cir.
East Ave.
Park
Marr Ave.
Bartlett Ave.
Dr.
Book Rd. N.
Lake St.
Temple La.
4th
3rd
Fair
Wesley St.
Ave.
Betts Ave.
Grand Ave.
Rd. N.
Bartlett
Exit
68
QUEEN ELIZABETH WAY
Lakemount
Sportsworld
Iroquois
Book
Tomahawk
Dr.
Ave.
GRIMSBY SCHOOL
HERITAGE GROVE

Grimsby Beach Grove

Although it only covers a half-acre and a 300-foot long stretch of Lake Ontario beach front, the Grimsby Beach Old growth Grove is treasured by the residents who live in the neighborhood behind it. For more than a century, the beachfront grove has been an essential part of the idyllic setting which attracted people to the lake cottages and the neighborhood. For generations, the ancient trees have been the canopy for weddings, the shade for summer festivities, the wind shelter for evening strolls, the scene permanently etched in childhood beach memories.

Its stocky and ancient trees, as large as 28-37 inch diameter, and as old as 200-250 years old, include White Oak, Sugar Maple, Shagbark Hickory, Black Cherry, Black Walnut, and Basswood. Of special significance is the Canadian Champion Canada Plum, estimated to be more than 250 years old.

The grove used to be much more extensive, both in width and depth. But residential and cottage development has reduced it to what exists today. Residents next to the grove, who heard of this project, asked that it be surveyed for Old Growth. The town had development plans that would eliminate much of the grove. The residents believed that the grove was Old Growth, and thought that if that was true, and confirmed by a national old growth authority, the town would have less support for cutting it down. My assessment confirmed they were indeed correct that it is Old growth. I provided them with the documentation, and they took their case to the town meeting. At last update, the town had delayed its decision on development.

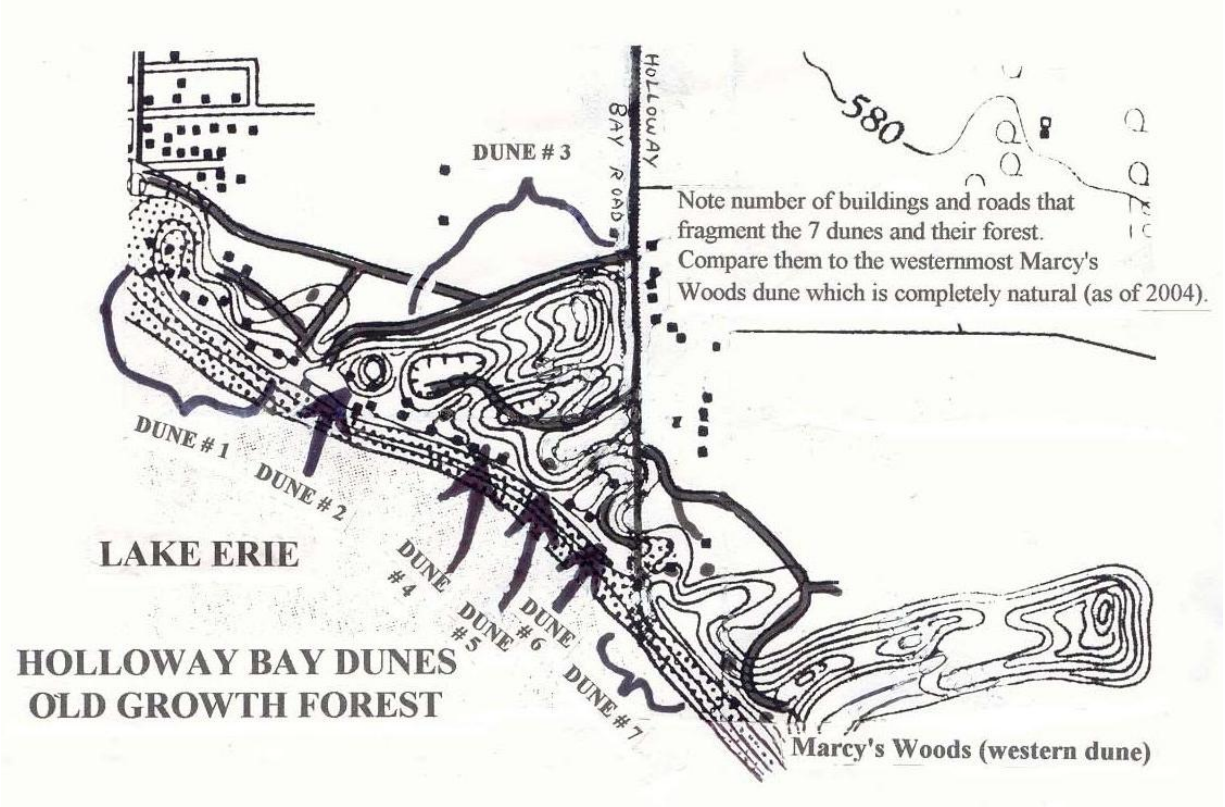
Old growth Tree Data:	Age (years) Range	Diameter Range	Comment
Sugar Maple	200+	34”	
Shagbark Hickory	200	20-28”	
White Oak	225	37”	
Black Walnut	90-120	20-32”	
Basswood	150	24”	
Black Cherry	200	25”	
Canada Plum	250+?	21”	Canadian Champion

Grimsby School Grove

The Grand Avenue School in Grimsby is fortunate to be graced by its own “colossus,” a 55.4"-diameter, 350-year old White Pine that is the centerpiece of a 2-acre urban grove next to the school. Accompanying it is a gargantuan Black Cherry (48-inch diam.) and a nearly-as-large Red Oak. About 20 mature White Pines make up the rest of the grove. (In only 250 years, they will be as big as their big brother is now.)

The White Pine and Black Cherry are the largest specimens representing their species so far found during this survey. This report recommends that the town should officially designate it as a “Heritage Grove” and write a tree by-law that gives it stringent protections just as strong as designated historic building.

Old growth Tree Data:	Age (years) Range	Diameter Range	Comment
White Pine	350	55.4”	This is the “lord of the grove”. Has a massive buttressed base
	100	18-24”	About 20 mature specimens
No. Red Oak	225	46”	
Black Cherry	225	48”	One of the region’s largest cherries

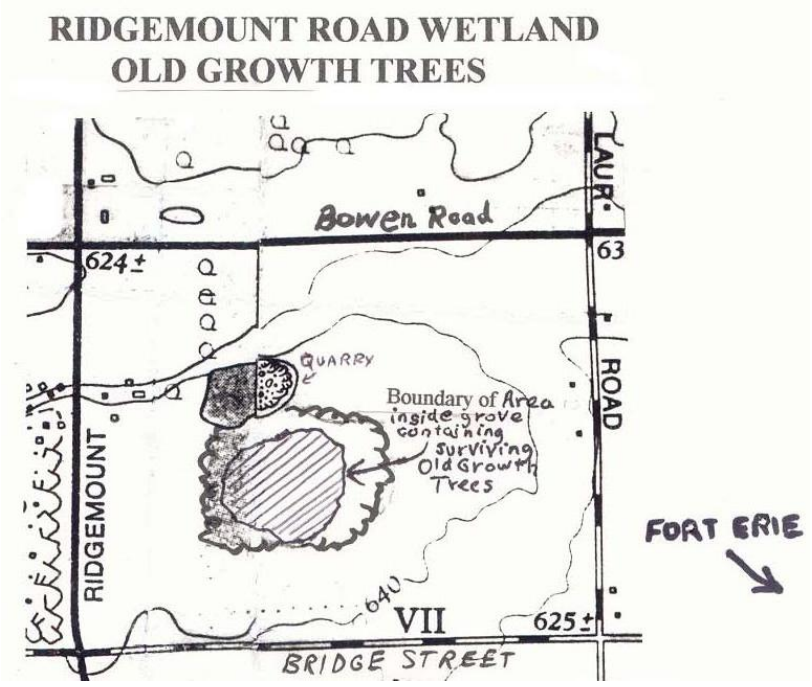


Holloway Bay Dunes

Just west of Marcy's Woods, large sand dunes continue west along the shore. Unlike the pristine (as of this writing anyway) dunes of Marcy's Woods, the Holloway Bay Dunes are broken up by houses and driveways. But they still contain fine Old growth Sugar Maple, Red Oak, Basswood, Red Maple, and some and Black Maple, too. They are highly significant as one of only three known sand dune sites covered by ancient forest along Ontario's Lake Erie shoreline.

Being privately-owned, they have no protection from future cottage development, just as already occurred on the parts that have been fragmented. It remains to be seen what approach the town government of Port Colbourne will take toward natural heritage protection.

Old growth Tree Data:	Age (years) Range	Diameter Range	Comment
Sugar Maple	175-225	20-34"	
Red Oak	170-185	28-34"	
Hemlock	200-240	20-23"	
Red Maple	150-170	25-31"	
White Ash	150-180	24-28"	Log ring count: 19" diam.=165 yrs
Basswood	200	24"	
Black Maple	180	30"	



Ridgemont Road Swamp Forest

About three dozen impressive Original Old growth survivors grow scattered evenly throughout an 80-90-year old Second-Growth forest. The highlight is a 300-year old, 40-inch diameter Bur Oak. Almost as old are a very large Sugar Maple, up to 270 years old. Others include massive White Oaks, 4 other very large Sugar Maples, and large Swamp and Red Oaks.

Based on the numerous, though not recent, stumps and logging tracks, the forest has obviously been subjected to periodic logging. It is therefore puzzling that the Old growth trees have not been cut down. It is even more puzzling that this site is so high in biodiversity. Regular logging reduces diversity (other than for species that prefer disturbed or weedy habitats).

The forest has the rare Black Cohosh, uncommon Black Ash, abundant spring wildflowers, and notable diversity of bird species (see list below of species casually noted during single visit). Despite the current fortunate biodiversity and survival of Old growth giants, logging is a serious potential and likely threat.

Old growth Tree Data:	Age (years) Range	Diameter Range	Comment
White Oak	225-240	40”	
Bur Oak	300	40”	
Red Oak	135-200	24-33”	Stump ring count 24” diam.=135 yr
Swamp Oak	185-250	30”	
Sugar Maple	270	very large	
	165-180	4 very large	
Red Maple	165		

Non-Old Growth Trees: Green Ash, White Ash, Black Ash, Bitternut, Winterberry, Hornbeam, Hop Hornbeam

Herbaceous Plants: White Trillium, Meadow Rue, Black Cohosh, Orange Mandarin, Squirrel Corn, Dutchmans Breeches, Columbine, Spring Beauty, Wood Fern, Christmas Fern

Birds: E. Wood Peewee, Wood Thrush, Great Crested Flycatcher, Titmouse, abundant Turkey, Great Horned Owl, Screech Owl, Red Tailed Hawk

Browns Point Heritage Trees

Along the Lower Niagara River, there is one place where high, inaccessible, dangerous bluffs do not overlook the river. About two miles north of Queenston, forested land curves away from the Niagara Scenic Parkway, blocking view of the river, and slopes gently down to the river. This area, with its own parking lot and stone historical marker, is Brown's Point. During the Phase 1 survey, this part of the shore line was overlooked for Heritage Trees, so the Phase 2 survey investigated the site.

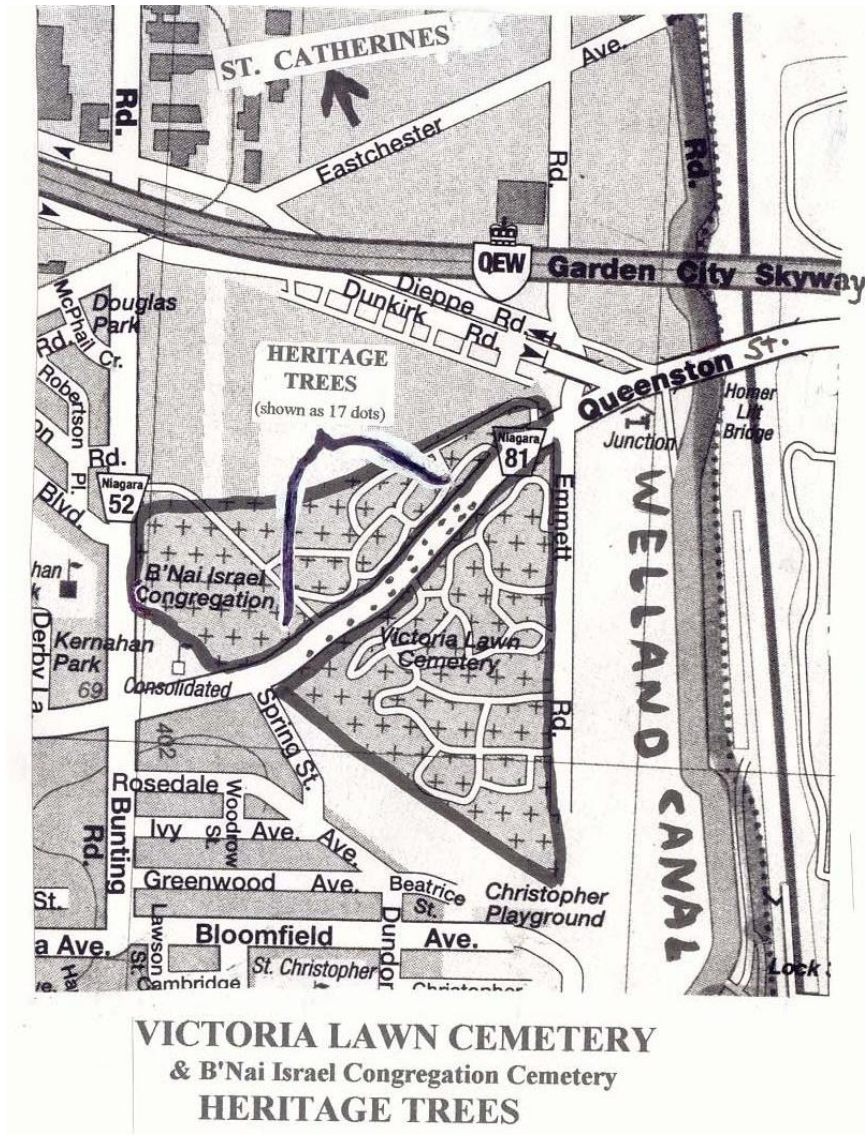
A total of 13 very large, Old growth Heritage Trees (White, Red, Black Oaks) grow along this low shore bluff of the Lower Niagara River. The "Necklace of Niagara River Heritage Oaks" now total 138.

But Brown's Point revealed something unexpected, a remarkably tall, old Second-Growth Forest which contains champion-size Black Cherry, Sweet Cherry, Pear, Black Walnut, and Black Locust. Another visit is needed when the leaves have been shed to measure the tree heights to see if there are any more surprise champions. For instance, a very tall forest-grown Pear tree (!) was found to be 66 feet tall, possibly Ontario's tallest. A towering forest-grown Sweet Cherry was 74 feet tall, also possibly Ontario's tallest. Also important to note is that this Black Oak-White Oak-Black Locust forest will become Secondary Old growth Forest in 25 years.

Old growth Tree Data:	Diam	Height
Pear	20-28"	66 ft.
Sweet Cherry	20-21.8"	74 ft.

Heritage Tree Data:	Diameter	Age	Comments
3 White Oaks on shore bluff:	30"	225 yr	
	35"	230 yr	
	32"	210 yr	
3 Black Oaks on inland side of trail:	39"	200 yr	
	30"	200 yr	
	38"	215 yr	
5 Red Oaks on inland side of trail (3 oaks)=	24"	175 yr	(3 oaks had these figures)
	30"	200 yr	
	39"	210 yr	
1 Sugar Maple:	52"	225 yr. `	on W. side of parkway opposite Browns Point Grove marker and parking lot

Browns Point Heritage Forest - Cherry



Victoria Lawn Cemetery Heritage Trees

In the 1850s, trees were planted along Queenston Street between the newly founded Victoria Lawn and B'Nai Brith Cemeteries. Today, 17 still survive as massive Heritage Trees. All of them are Sugar Maples and Horse Chestnuts, with diameters in the 3 to 3.5-foot range.

They are adjacent to the Welland Canal in St. Catherines, and ¼-mile south of Queen Elizabeth Way's Garden City Skyway.

Heritage Tree	No.of trees	Along which Cemetery?
Sugar Maple:	10	Victorian Lawn
	5	B'Nai Brith
Horse Chestnut:	2	B'Nai Brith

The Bi-National Niagara Corridor of Forest Antiquity

When the 5-mile long "Necklace of Heritage Oaks" was discovered, it became immediately apparent that it connected the large Paradise Grove to the Niagara Gorge, which is directly connected to the Falls of Niagara by the 7-mile long corridor of ancient Cedars, with more major ancient forests to the south. Furthermore, this long stretch is connected to many other Old growth sites, including the Niagara Glen, with a parallel set of sites on New York side. By assembling this previously unrecognized, remarkable belt of Ontario-NY 27 Old growth sites, the realization was clear: the lower half of the Niagara River has one of the greatest and most diverse concentrations of Old growth Forests in this part of the continent.

This "**Bi-National Niagara Corridor of Forest Antiquity**" is a 15-mile belt of 24 Old growth Forests connecting Lake Ontario to Niagara Falls and south to Navy Island. It is composed of 17 ancient forests on the Ontario side (501 acres) and 7 on the New York side (29 acres). They are amazingly diverse, spanning 11 forest types; landscapes ranging from cliffs to gorge bottom, large island to Niagara Escarpment, urban center to agricultural lake plain, river shore to lake shore. But most important of all, they are all associated with the world's largest and waterfall and best known scenic tourist attraction, along the Canada-U.S. international boundary.
Most of these Old growth Forests are easy to see and very accessible to the public. Some are right in the center of, or close to, the heavily visited tourist districts. This unique "Corridor of Forest Antiquity" presents many unique benefits.

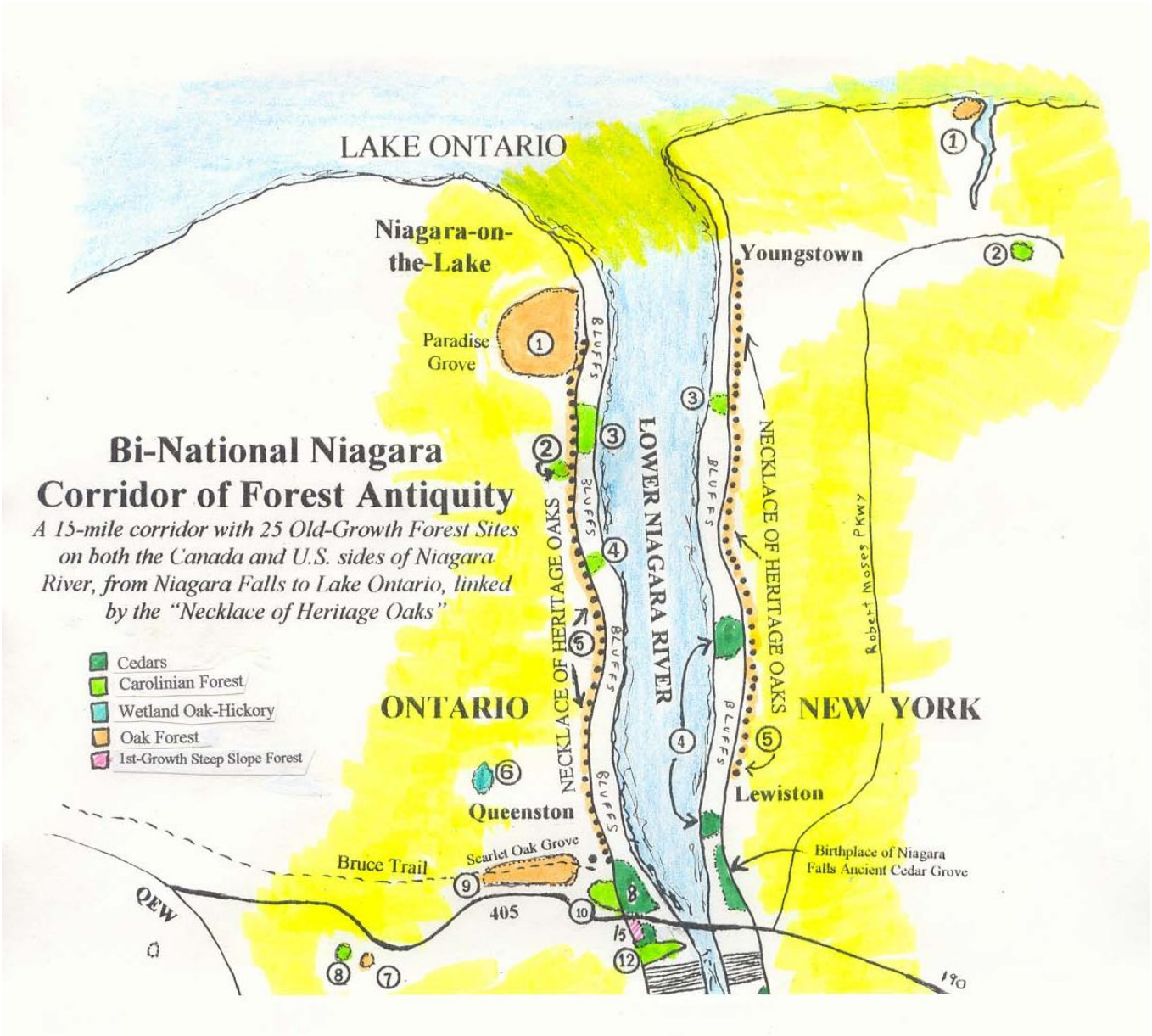
Boost Ecotourism and Bi-National Cooperation Publicizing this is an ideal opportunity to benefit the ecotourism economy and develop a partnership to grow appreciation for the bi-national area's natural and historic heritage by promoting a concept that is growing in popularity, but new to this region: "Ancient Forests," "Champion Trees" and "Heritage Trees."

It can emphasize that the cities of Niagara Falls have the greatest amount of Old Growth of any eastern North American city. Coupled with this is that one of the groves is within the spray of the Falls itself, *the world's most massive waterfall*. It also claims Ontario's tallest broadleaf forest, the largest broadleaf ancient forest on the entire U.S.-Canada boundary; one of the largest Black Walnuts in the world located in an ancient grove exactly where Niagara Falls was born, and much more.

Enhance Education The wide array of ancient forest sites are ideal for field trips by all levels of schools and colleges. Old growth Forests offer lessons about ecology, history, biology, philosophy that other forests cannot. They are certainly the only places to walk through the original native landscape as it existed before European settlement, and even see the trees that are still living from that era. This investigator has taught such lessons, workshops and outdoor labs in Old growth Forests for University of Buffalo and other institutions.

Attract Scientific Research The awareness that such an array of pristine biological communities exist so close to metropolitan areas, especially Toronto, creates attractive scientific research opportunities. There are few places left where scientists can study forests comprised of species that established themselves during a former climate, or encounter the largest, oldest and tallest of a wide variety of species, or find a concentration of rare and threatened species – all in one small area.

Enhance Quality of Life Publicizing of ancient forests that are so close and easy to visit enables people to enjoy the unique qualities that these forests are famous for: they are sources for inspiration; places to see beauty at its best; sources of fascination and awe, for where else can one stand beneath Ontario's largest forest-grown Black Walnut or Ontario's tallest hardwood tree?


LAKE ONTARIO
Niagara-on-the-Lake
Youngstown
Paradise Grove
Bi-National Niagara Corridor of Forest Antiquity
A 15-mile corridor with 25 Old-Growth Forest Sites on both the Canada and U.S. sides of Niagara River, from Niagara Falls to Lake Ontario, linked by the "Necklace of Heritage Oaks"
Cedars
Carolinian Forest
Wetland Oak-Hickory
Oak Forest
1st-Growth Steep Slope Forest
NECKLACE OF HERITAGE OAKS
LOWER NIAGARA RIVER
BLUFFS
Robert Moses Pkwy
ONTARIO
NEW YORK
Lewiston
Queenston
Bruce Trail
Scarlet Oak Grove
Birthplace of Niagara Falls Ancient Cedar Grove
QEW
405
190


ONTARIO SIDE:
1. PARADISE GROVE (55 ac.) giant 275- yr Savannah White, Black and Red Oaks
2. MCFARLAND HOUSE GROVE: ¼ ac. giant 200 yr. White Oaks next to historic Niagara riverfront home
3. NIAGARA RIVER BLUFF GROVE: 3 ac. on lower Niagara River slopes with 250 yr., 5 ft. Walnut & massive Oaks
4. RED SHALE RAVINE GROVE: Tiny grove of huge trees
5. NECKLACE OF HERITAGE OAKS: 5-mi.string of 138 massive 180-325 yr. Oaks, up to 6-ft.thick, along Niagara River
6. GRAY FOREST SHUMARD OAK GROVE 6-ac., one of only 2 ancient northern groves of very rare giant, southern oak
7. CALAGUIRO PARK GROVE: 4 ac. 200 yr. Red, White Oaks
8. BRUCE TRAIL-FIREMAN'S PARK GROVE: 6 ac. 160-200 yr. Carolinian Forest and large Oaks along Bruce Trail
9. BRUCE TRAIL SCARLET OAK GROVE: ancient Scarlet Oak, new tree for Canada, discovered in 15 ac. old-growth oak forest, where Bruce Trail was born, and near Brock's Monument
10. BIRTHPLACE OF NIAGARA WALNUT GROVE: 6 ac. of huge ancient trees around World's Tallest Black Walnut (137')
11. NIAGARA GORGE ANCIENT CEDARS: 10 ac. 7-mi. corridor of 700 ancient cliff White Cedars, to 500+ yr. old
12. SMEATON'S RAVINE: 4 ac. hidden ravine, 40' falls, seldom seen ancient forest, rare tree
13. NIAGARA GLEN: 60 ac. Ontario's tallest hardwood forest, to 134', with rare Carolinian trees, spectacular rock formations
14. WHIRLPOOL FOREST: 25 ac. ancient Carolinian forest on slopes circling famous Whirlpool, with giant Tulip Trees
15. NIAGARA GORGE 1st-GROWTH FOREST 40 ac. on unstable, steep slopes, mix of ages, undisturbed by humans
16. CLIFTON HILL BLUFF: 50 ac. ancient Carolinian forest on 2-mi. long wooded bluff between Clifton Hill & the Falls, some giant, to 275 yrs. old. S. of Murray Hill Rd. is mix of young & old
17. NAVY ISLAND Ntl.Historic Site, upstream in Niagara River. 205 ac. Forest type found nowhere else in world: Shellbark Hickory-Shumard Oak Wetland Forest. Towering, giant, ancient trees, some champion size
Lord of the Rings Ancient Cedar Grove
NIAGARA GORGE
NIAGARA GORGE
DeVeaux Woods
City of Niagara Falls, Ontario
420
City of Niagara Falls, NY
Clifton Hill Old Growth
CLIFF
Niagara Falls
Niagara River
Niagara River
Navy Island
Grand Island
QEW
NEW YORK SIDE:
1. FOUR-MILE CREEK GROVE: 4 ac. of 250 yr large white, black oaks, sassafras on wild Lake Ontario shore just east of Niagara River mouth
2. OAKLAND CEMETERY GROVE: 4-ac. with 6-ft. red oak, 300-yr white oak, 92-ft. sassafras, next to historic cemetery
3. NIAGARA RIVER BLUFF RAVINE: ravine grove on lower Niagara slopes
4. NIAGARA RIVER RED SHALE CLIFF ANCIENT CEDARS: ancient Red Cedars cling to cliffs over lower Niagara River
5. NECKLACE OF HERITAGE OAKS: 100+ large Oaks, up to300 yrs, along NY side of Niagara River for 5 miles, matching the Ontario 'Necklace'
6. NIAGARA FALLS NORTH CITY GROVE: 3-ac. stand of ancient oaks
7. DEVEAUX WOODS: 10 ac. of 225-280 yr. towering, massive Red, White, Black Oaks close to Niagara Gorge, next to Robert Moses Parkway
8. NIAGARA GORGE ANCIENT CEDARS: 10 ac., 7-mile corridor of 574 ancient cliff White Cedars, 500+ yr. old, as close as 75 ft. from American Falls

SECTION 5: REASONS FOR SURVIVAL OF OLDGROWTH FORESTS IN EASTERN NIAGARA PENINSULA

The survival of Old growth Forests is a very unlikely occurrence, since 0.14 % ($14/100^{th}$ of one percent) of the original, pre-settlement forest of eastern Niagara Peninsula is all that remains, based on these findings. An analysis was made to determine what pattern of factors allowed these forests to escape the axe and saw for the purposes of logging, firewood, agricultural clearing, and deforesting for building of villages, urban centers and roads. To do this, it was needed to compare the kinds of properties they were found on, and information was collected during the survey on the known histories for those properties and their forests. In addition, it was important to have some general knowledge of when European settlers first arrived in this region, and when the towns established themselves. This analysis is *not* meant to be a thorough investigation into the in-depth history of each site, just an initial look to see obvious patterns. The investigator has had experience doing this for several regions in Northeast U.S.

To set the context for this comparison, it is important to remember that we are looking only at the period from 1700s up to World War I. This is the pre-mechanized, old-fashioned logging era, when mule, horse or oxen-drawn wagons were used to haul logs. The charts and bar graph ahead display the data from this analysis. Sites for which no reason or factor could be determined were left out of the analysis. Some sites had multiple reasons (a site that was steep that became part of an early wealthy estate that soon got turned into an early public park; example: Clifton Hill public park site). For this analysis, only the most important and historically first of the reasons was used for the analysis. See the following Chart and Bar Graph for specific site-by-site information and comparisons.

Steep or Difficult-to-Reach Sites Most of these sites are gorges, ravines, cliffs, and steep slopes. These places were simply inaccessible or too difficult to reach for wood cutters of that era, or at least financially too expensive or not worth all the effort, to pull all the timber out. (In contrast, no location is inaccessible to modern logging vehicles and bulldozers today. Trees today are even "harvested" off slopes so steep that people could not safely walk on them, and even off the faces of cliffs.)
ANALYSIS: 18 sites (35%) fell into this category. Today, 14 of them are permanently protected, while 4 are not (the private Fonthill Kame sites and Sugarloaf Hill sand dune). One site, the Lathrop Preserve, was protected originally because its ancient forest was situated on steep slopes and ravines. That would not protect it from today's modern technology, however. Fortunately, a modern owner with a conservation ethic decided to donate it as a preserve to the Nature Conservancy of Canada.

Early Owners Likely to Have Had Conservation Ethic Some rural forest owners from past centuries (as today) chose not to cut all their forests or "woodlots." For example, they may have realized that it was not a good idea to cut all of the trees along a lake shore or river banks, so they left a corridor of forest that kept its old trees. Based upon examples elsewhere, others they or their family had special feelings for a particular woodlot or felt it was especially beautiful (Grimsby Point is an actual case example). Others wanted "mature forest" for wildlife.
ANALYSIS: 9 sites (17%) met this category. Unfortunately, today, only 2 of those 9 are permanently protected, while 7 are not, all of them private sites. The lesson here is that even if a past (or present) landowner maintains a strong conservation ethic that is passed down through generations, it won't matter if the land ultimately gets sold to another private landowner who doesn't share that ethic. Marcy's Woods is a classic example of this.

Early Public Land The Niagara Region is unusual in Canada because purchase of land to create protected parks around Niagara Falls occurred very early, the 1880s. In fact, this is when the "modern public park" concept was created. It started with Niagara Falls on the New York side with the "Save Niagara" movement. It was history's first modern environmental outcry. It resulted in the first state park ever, the Niagara State Reservation State Park. Immediately after, the Ontario side followed suit. Except they did the park idea better and grander. And any of the original forest that happened to lie within those early park boundaries remained protected from commercial logging and deforesting for development or agriculture. (However, smaller scale clearing for roads and park facilities occurred, such as the road through the middle of Paradise Grove).
ANALYSIS: 8 sites (15%) owe their survival primarily to their becoming public land during the 1800s. *Today, all 8 sites are protected from any serious threats from cutting or clearing.* Besides these, 5 more also became early public land, but

would have been protected anyway during the pre-modern period because of their inaccessibility, such Niagara Gorge's Cedars, Whirlpool Slopes, and Niagara Glen. While most are part of parks along the Niagara River/Niagara Gorge corridor, Navy Island was military land, which was clearly off-limits to anybody else; Navy Island later became part of Canada's federal park system.

During the modern period, 20 more sites have become part of public lands such as parks, conservation areas, and school or village/town lands. Of these, 17 are essentially protected, but one school-owned site and one village-owned park have had portions destroyed by those owners. No information is available for a third school-owned site.

Early Wealthy Estates When early (as well as current) wealthy land-owners decided where to establish their personal estates, they looked for places with the highest quality views and most beautiful scenery. Typically, these sites were vistas atop bluffs and hills, or lake or river shores, or most prized of all … waterfalls. Large and towering trees were considered to be a beautiful part of the view, especially if they framed the panorama, or if they surrounded the mansion. Stately forests (Old Growth) were often a valued part of the landscape of the estate. Therefore, such trees, which were part of the Old growth Forest, were not cut down but valued in their standing, living state. In addition, the wealthy owners did not need to cut their forests to earn revenues, as many others around them did. As a result, if a wealthy estate that was started in the 1800s continued through several generations of wealthy owners to modern times, the property often retains some of its original forest. Sometimes, these old estates "break up" and become transformed into public or non-profit historic sites or parks.

ANALYSIS: 4 sites (8%) met this category. Today, 3 are protected, and 1 is not. The 3 that are protected were 19th century estates along the Niagara corridor that became incorporated into public parks. The site that is not protected is the *upper* half of the slope of the Clifton Hill Bluff overlooking the Falls of Niagara. Captain Creighton had his mansion atop the bluff in the 1840s. Although everything below the upper slope became public park, the Old growth-covered upper slope remained privately owned, and is now highly vulnerable to potential, but likely, plans for hotel development.

Early Recreation or Scenic Properties Certain properties in the 1800s and early 1900s were highly valued for their scenery and nature-based recreation, such as lake shore views, beaches, bluff-top vista points, or waterfalls. The idea of cutting down the great trees or inspiring forest was generally avoided. These sites became early recreation camps; lakeshore or beach cottage districts; or private recreation or amusement parks. Unlike wealthy estates, they were owned by, or used by, the middle-class, and were often used by significant numbers of people.

I have added the "Sugarbush" to this category. This is a forest used by a rural landowner to commercially produce maple syrup. The similarity is that the owner values (for commercial reasons) retaining the forest with its large Sugar Maple trees (Old growth trees in this case).

ANALYSIS: 3 sites (6%) were this kind of property. Today, only 1 is protected, and 2 are not. Erie Beach Amusement Park retained its large scenic trees, and, when it closed as a business, was turned into a Town Park. On the other hand, Grimsby Beach Village Park, a treasured lakeside scenic area, is under threat by a village project. The third site, an Old growth Sugar Bush, has no legal protective status under private ownership.

Historical Luck In this analysis, no reason could be found other than historical luck and happenstance. It appears that some of these Old growth stands were small enough to simply have gotten "missed" during the logging era. Perhaps some sites were owned by absentee property owners, or were located at the far back end of a property (inconvenient to reach). More information may reveal another reason why these Old growth sites survived the early period. For the time being, this analysis probably still is helpful in clarifying this question. (Note: 10 other sites are labeled "unknown" because a careful review of all factors could not suggest any reason or trend for their survival . These were not considered in the analysis at all.)

ANALYSIS: 11 sites (21%) appear to have simply "lucked out." Today, only 4 are protected; 3 of these are city parks and 1 is a non-profit preserve. Of the other 7, 6 are remain privately-owned and still need their "luck" to continue if they are to survive to another decade. For the 7th site, also privately-owned, its "luck" did run out, and it was completely logged in 2003, coincidentally about a year after it was discovered.

NIAGARA PENINSULA OLD GROWTH FOREST SURVEY

REASONS FOR SURVIVAL OF PHASE 1 OLD GROWTH FORESTS

PHASE 1 SITES	???	ORIGINAL REASON (pre-1900s) Historical Random Luck?	EARLY Steep or Difficult to Reach	Early public land	Early recreatn camp/property or sugarbush	Wealthy Estate – no need to cu	Owners had Conservatn Ethic	SUPPLEMENTAL MODERN REASONS Owners hac Conservatn Ethic	Wealthy Estate – no need to cu	Early recreatn camp/property or sugarbush	Became or *Remained Public Land	Amount of PROTECTION TODAY
NIAGARA GLEN			X	X							*X	PROTECTED
NIAGARA GORGE CEDARS			X	X							*X	PROTECTED
PARADISE GROVE				X							*X	PROTECTED
MARCY'S WOODS							X?	X	X			THREATENED
BROCKS MONUMENT											*X	PROTECTED
SCARLET OAK GROVE				X								
GRAY FOREST SHUMARD OAK GROVE							X	X now				NONE
NIAGARA RIVER BLUFF WOODS				Xpart		Xpart					*X	PROTECTED
NIAGARA RIVER HERITAGE OAKS				Xpart		X part					*X	PROTECTED
BOWMANS ARCHERY CLUB BLACK GUM WOODS**	X	<-- part									X	PROTECTED?
ERIE BEACH GROVE					X						X	PROTECTED
Bruce Trail-Firemans Park Grove		X?									X	PROTECTED
CALAJUIRO PARK		X?									X	PROTECTED
RIDGEMOUNT ROAD HYBRID OAK GROVE	X?											NONE-LOW
SPLIT ROCK GROVE							X?					NONE
PHILIPS SUGAR BUSH GROVE					X							NONE
SKARRETT OAK GROVE							X?	X now	X			NONE
BOWEN ROAD-QEW GROVE		X?										NONE
HIGENELL OAK GROVE							X	X now				NONE
SIX MILE CREEK OAK GROVE		X										NONE
WALDEN BLVD. OAK GROVE		X										NONE
OLIVER'S BUSH GROVE							X?					BEING LOGGED -200
FRENCHMAN'S CREEK OAK GROVE		X										DESTROYED 2003
** also black gums had no $ value												
Subtotal (see next page)	2	6	2	3	2	1	6	2	2	0	10	
	only main reasons counted (large X)									Note: "public" includes non/profit preserve		

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NIAGARA PENINSULA OLD GROWTH FOREST SURVEY

REASONS FOR SURVIVAL OF PHASE 2 OLD GROWTH FORESTS

PHASE 2 SITES	ORIGINAL EARLY REASON (pre-1900s)							SUPPLEMENTAL MODERN REASONS				Amount of PROTECTION TODAY
	???	Historical Random Luck?	Steep or Difficult to Reach	Early public land	Early recreatn or scenic or sugarbush	Wealthy Estate - no need to cu	Owners had Conservatn Ethic	Owners hac Conservatn Ethic	Wealthy Estate - no need to cu	Recreatn/tourist camp/property or sugarbush	Became or *Remained Public Land	
NAVY ISLAND			X	X							*X	PROTECTED
BALLS FALLS GORGE			X								X	PROTECTED
WHIRLPOOL SLOPE FOREST			X	X							*X	PROTECTED
Birthplace of Niagara Walnut Grove	X										*X	PROTECTED
ST. JOHNS WOODL'D CTR RAVINE							X?				*X	PROTECTED
LATHROP PRESERVE			X					X			X	PROTECTED?
GRIMSBY POINT					X		X	X			X	PROTECTED?
SWAYZE FALLS RAVINE			X								X	PROTECTED
SUGAR LOAF HILL			X									NONE - LOW
HEMLOCK VALLEY			X								X	PROTECTED
Hamilton Naturalists Club Preserve		X									X	PROTECTED
Clifton Hill Bluff public lower slope				X	X	X					*X	PROTECTED
Clifton Hill Bluff private upper slope					X	X				X		LOW-NONE
ST. JOHNS CONSERV. AREA			X								X	PROTECTED
DECEW FALLS GORGE			X								X	PROTECTED
NO. FONTHILL KAME RIDGE-RAVINE			X									NONE
ROCKWAY FALLS GORGE			X								X	PROTECTED
MORGANS POINT	X									X	X	PROTECTED
12-MILE CREEK FLOODPLAIN	X										X	PROTECTED
SMEATONS RAVINE			X								*X	PROTECTED
WOODLAND SCHOOL GROVE		X									X	NONE
SO. FONTHILL KAME RIDGE-RAVINE			X									NONE
TERRACE CREEK GORGE			X								X	PROTECTED
GRIMSBY BEACH					X					X	X	THREATENED
Central Fonthill Ridge/Ravine			X									NONE
BEAMERS FALLS GORGE		X									X	PROTECTED
NIAGARA GORGE FIRST GROWTH			X	X							*X	PROTECTED
HOLLOWAY BAY DUNES							X?			X		NONE
RIDGEMONT RD SWAMP FOREST		X										NONE
SO. QUEEN VICTORIA PARK BLUFF			X	X							*X	PROTECTED
GRIMSBY SCHOOL GROVE	X										X	PROTECTED?
15-MILE POND BLUFFS		X										NONE
BROWNS PT. HERITAGE TREES				X							*X	PROTECTED
Victoria Lawn Cemetery Heritage Trees				X							*X	PROTECTED
TOTAL	**10**	**11**	**18**	**9**	**3**	**4**	**9**	**2**	**2**	**4**	**36**	

only main reasons counted (large X)

Note: "public" includes non/profit preserve

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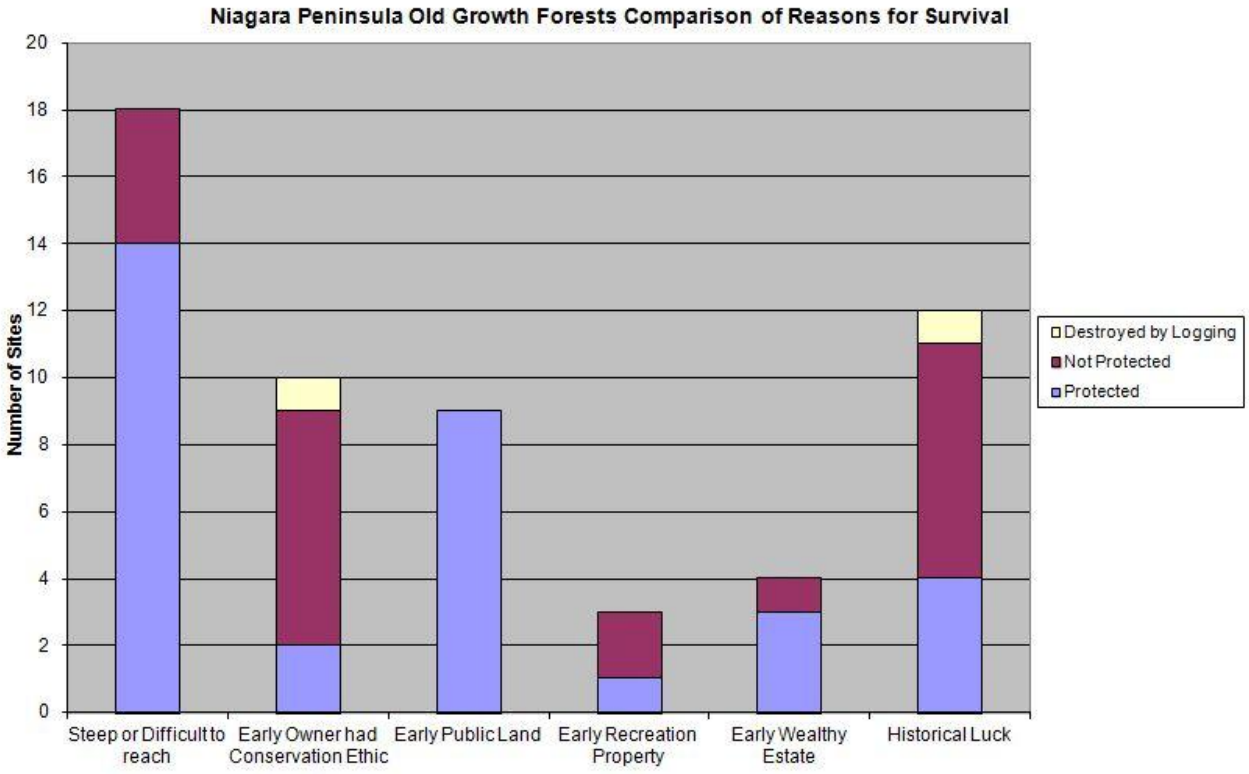
Niagara Peninsula Old Growth Forests Comparison of Reasons for Survival
Number of Sites
20
18
16
14
12
10
8
6
4
2
0
Steep or Difficult to reach
Early Owner had Conservation Ethic
Early Public Land
Early Recreation Property
Early Wealthy Estate
Historical Luck
Destroyed by Logging
Not Protected
Protected

SECTION 6: APPEDICIES

APPENDIX A – Example of Old growth Forest Field Survey Form (2-sided)

APPENDIX B – List of Sites Found Not to Be Old growth During Survey (3 pp)

APPENDIX C – Project-Related Old growth Forests Discovered Outside the Niagara Peninsula

APPENDIX D – List of Tree Species In Report – Common Names and Scientific Names

New York Old Growth Forest Association

OLD GROWTH FOREST SURVEY FORM

Date of visit _____ 518-875-6935 www.championtrees.org/NYOGFA/

Name of Site _____ Owner _____

Town _____ County _____ Nearest Roads/Villages _____ Elev._____

Surveyed by _____ Name of Team _____

CHECK ONE: ☐ Original Old Growth ☐ Secondary Old Growth ☐ 2nd Growth w. Old Growth Component ☐ 2nd Growth

Estim. Acres of Old Growth ____ Entire Property Size _____ Forest Type

Check off Boxes Below that apply

TREES OF THE CANOPY

Old Growth ?	Dominant ?	Tree Species	Old Gr Bald or Shaggy Bark	Buttr Roots	Stag head Crown	Tall trunk w high boughs	Moss Grows Up Trunk	Stilt Roots	Bizarre trunk forms	High value comm. exotic species	Estim. Age Class	Estim. Diam Class	Comments
		E. Hemlock											
		Tulip Tree											
		Yellow Birch											
		Black Birch											
		Sugar Maple											
		Red Maple											
		No. Red Oak											
		White Oak											
		Swamp White Oak											
		White Ash											
		E. White Pine											
		Amer. Beech											
		Amer. Basswood											
		Black Cherry											
		other:											

UNDERSTORY and GROUND LAYER

Trees, incl.saplings, seedlings	Shrubs & Vines	Herbs, ferns, mosses, fungi & lichens	

New York Old Growth Forest Association

Tree Data: Size & Age

Forest Survey Report DATA SHEET page 2 of

Team: _____ 518-875-6935 www.championtrees.org/NYOGFA/

Section _____ Altitude _____ Size: Ecotype _____ Altitude _____ Size: acres

ID	Tree / Forest remains / Living trees			SIZE			AGE			
	species	location	condition	girth	dbh	height	no. rings	core length	est. age	comments
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										

CHECK Other Old Growth Indicators

- ☐ pit & mound topography
- ☐ abundant logs & coarse woody debris
- ☐ presence of snags
- ☐ Super-canopy trees
- ☐ Domin.by long-lived/shade tolerant spp
- ☐ Minimal or No Human Disturbance

Evidence of Human Disturbance (state how numerous or recent)

- stumps _____
- old logging roads _____
- early successional or sun-loving trees _____
- planted trees _____
- stone walls _____
- open-grown trees _____
- coppiced trunks _____

Other Disturbance

- ☐ beech blight
- ☐ hemlock adelgid
- ☐ deer overbrowsing
- ☐ fire evidence
- ☐ poor tree regeneration
- ☐ serious alien spp. invasion
- ☐ spruce die off

FAUNA OBSERVED

Site Topography, Geology & Land Features

Known or Potential Threats by Human Activities

NIAGARA PENINSULA OLD GROWTH FOREST SURVEY

SITES FOUND NOT TO BE OLD GROWTH DURING PHASE 1

SITE	Acres estimate	LOCATION & OWNER	COMMENTS
Abino Slough Forest	10?	Fort Erie, private	2nd growth red maple-oak with scattered old growth: 3 foot swamp & white oaks, 45 inch diameter hybrid bur oak-swamp oak, 38 inch red oak, and an old growth red maple
Koebel Farm Grove	15	Fort Erie, private	70 year old 2nd growth woods with one 350 year old, 25 inch diameter black gum, 10 mature black gums, and a 40 inch diameter 180 year old red oak
House Road Shellbark Hickory Grove	15	Fort Erie, private	60-90 year old 2nd growth with widely scattered old growth individual bur & swamp oaks. Selectively logged in 1800s, not since. Cattle grazed. 127 year pin oak. 4 old shellbark hickories, many younger shellbark hickories (a rare species)
Gilmore Dr.#1 Grove near Bridge St.	20	Fort Erie, private	A few small 150 year old white & swamp oak in 90 year old 2nd growth oak-red maple-ash forest; scattered 40 year old stumps. Best trees already marked for logging by MNR
Gilmore Dr.#2 Grove near Bridge St.	20	Fort Erie, private	See above description
Brown-Garner Road Grove	18	Niagara Falls, private	Immature wet forest with a 35 inch diameter pin oak & one 36 inch old growth white oak
Oliver's Bush West Woods	20	Fort Erie, private	Stately 2nd growth, 100 years old, very light selective logging 20 years ago. Two 160-year sugar maples, much cherry, beech, ash; also black walnut, shagbark. Historic cemetery adjacent
Bowen-Laur Road Road Grove	0.5	Fort Erie, private	2nd Growth woods, actively selective cut with scattered old growth 150-170 year sugar maple
Dept. of Defense White Pine Grove	15	Niagara-on-the-Lake, Military	90 year old white pines in mature oakd forest along Lake Ontario shore with a few large old growth white oaks along shore of wetland
Bertie Rd. Grove (west of Pettit Rd.)	7	Fort Erie, private	Heavy logging in 2001 destroyed old growth trees in oak woods
Bertie Rd.#1 Grove (west of Sunset Dr.)	10	Fort Erie, private	90 year old lowland woods of green ash, red maple, swamp oak
Bertie Rd.#2 Grove (west of Sunset Dr.)	5	Fort Erie, private	90 year old lowland woods of green ash, red maple, swamp oak

Bertie Rd.#3 Grove (west of Sunset Dr.)	5	Fort Erie, private	90 year old lowland woods of green ash, red maple, swamp oak
Waverly Beach Grove (Washington-Helena Rd.)	4	Fort Erie, private	Not old growth, mature sugar maple, ash, swamp oak, red oak, some old stumps
College Road Grove	30	Fort Erie, private	2nd growth woods, heavily logged 50 years ago
Bertie-Teal Road Grove	60	Fort Erie, private	Second growth selectively logged
Nigh-Cherry Hill Blvd. Grove	50	Fort Erie, private	Not old growth, mature sugar maple, ash, swamp oak, red oak, some old stumps
Bowen Road Grove (west of QEW)	10	Fort Erie, private	100 year old oak grove
Somerville-Willoughby Rd. Grove	15	Fort Erie, private	65 year old 2nd growth beech woods with red-silver maple & bitternut hickory
Morningstar Road Grove	60	Fort Erie, private	65 year old 2nd growth red maple, bitternut wet woods, logged periodically in last 20 years. A few mature 26 inch swamp oak
McLeod-Garner Road Grove	100	Fort Erie, private	Immature wet forest
Miller's Creek Site	0	Fort Erie, private	Reported big trees no longer exist
Sunset Drive Grove	15	Fort Erie, private	70 year old lowland woods of green ash-red maple-white ash
Sutherland Drive Grove	20	Fort Erie, private	70 year old lowland woods of green ash-red maple-white ash
Frenchman's Creek East Grove	4	Fort Erie, private	Forest with large crowns on aerial photos turned out to be mature cottonwood forest
Frenchman's Creek West Grove	5	Fort Erie, private	Forest with large crowns on aerial photos turned out to be mature cottonwood forest
Mann's Woods	20	Fort Erie, private	Large beech & tulip trees selectively logged in 2000, what is left is 40-70 year old sugar maple, yellow birch, white ash and beech
Navy Hall Big Pines	0	Niagara-on-the-Lake, public park	Reported big trees no longer exist
Wood End Conservation Area	30	Niagara-on-the-Lake, public park	Forest along Niagara Escarpment here is 2nd growth
29 SITES TOTAL TOTAL ACRES =	583.5	3 public, 26 private	9 second growth sites have a few scattered old growth survivors in them.
			Recent logging destroyed old growth trees in 2 sites.

NIAGARA PENINSULA OLD GROWTH FOREST SURVEY

SITES FOUND NOT TO BE OLD GROWTH DURING PHASE 2

SITE	Estimated Acres	LOCATION & OWNER	COMMENTS
SHORT HILLS- FONTHILL AREA:			
Terrace Creek Trail East	20	Thorold, Short H Prov.Park	Very mature, notably tall 2nd growth Carolinian forest with scattered Old growth trees & rare plar incl. White Wood Aster . Tulip Trees reach 120 fe tall
Fonthill Sand Ravine-St. Johns Tributary	10	Pelham, private	Very mature 2nd growth, selectively cut in recent decades, with large White Pines & 120-140 yr Tulip Tree, Red Oak. Needs protection as part of Fonthill ANSI
Central Fonthill Kame Ridge & Ravine	60	Thorold, private	100-120 year old high quality Carolinian Forest of Sugar Maple, Red & Black Oak White Ash, Basswood, Sassafras. Threatened by logging, unontrolled ATV abuse, needs protection as part of Fonthill Kame ANSI , more undiscovered Old Growth may exist.
Northern St. Johns Conservation Area	30	Pelham, public park	High quality mature 2nd growth Carolinian Forest incl. Sassafras. Should be protected as part of Fonthill Kame ANSI.
Effingham & Mettler Road Slope	10	Pelham, private	80-100 year old 2nd growth forest of White Oak, Basswood, Black Cherry, Sugar Maple
Scarlet Tanager Trail Ravine	10	Pelham, public park	75-125 yr.old 2nd growth forest in avine of tributary of 12-Mile Creek in Short Hills Prov. Park
Southern Short Hills Prov. Park Ravines	20	Pelham, public park	Unlike the Old Growth southernmost ravine, other ravines are 2nd Growth woods, cut 90 yrs. ago
LAKE ERIE COAST AREA:			
Harold Mitchell Nature Reserve of Hamilton Naturalists Club	31	Wainfleet, non-profit	Last mature (100- yr. old) Hemlock forest on Lake Erie shore of Niagara region. Has scattered Old Growth Sugar Maple. Hemlock forest in this region
Camelot Hill Lake Erie Sand Dune	6	Wainfleet, private	Very ancient Old Growth Maple, Hemlock (rare on sand dunes) in old, 2nd growth forest, fragmented by houses, driveways. Deserves protection

Guenther's Grove Lake Erie Sand Dune	3	Wainfleet, private	2nd growth woods, once high quality, now dune being destroyed by housing dvt

NIAGARA ESCARPMENT:			
Sanitorium Hill	50	Thorold, college	90 yr old 2nd growth forest on Niagara Escarpm't slope below Brock University. Sugar Maple, Red Oak, White Ash, Basswood dominate. Most is college owned.
16-Mile Creek Niagara Escarpment	30	Thorold, private	70 year old Maple-Ash Forest on very steep bluff W. of Moody Lake Hydropower Dam. Despite steepness, it was agressively logged with 40-degree roads.
Mountain Road Woods	10	Niag. Falls, private	7 large scattered Old Growth survivors (Red Oak)in young 2nd growth forest.
Louth Falls Gorge	25	Lincoln, public?	Very mature 2nd growth. Ravine not steep enough to prevent being logged
Upper Balls Falls Gorge (in Conserv. Area)	20	Lincoln, public	Mature 2nd growth. Ravine not steep enough to prevent being logged
Jordan Regional Road 81	10	Lincoln, private	Scattered Old Growth Sugar Maples & Red Oaks in 2nd Growth Forest
Cave Springs Conservation Area	25	Lincoln, public	Young 2nd growth White Ash-Sugar Maple forest on rim & slopes of Niagara Escarpm't. Some recall large trees on rim, must have been cut
Beamers Gorge	30	Grimsby, public	2nd growth Carolinian Forest, aggressively logged 100 years ago, logging road still visible, even though gorge is steep

LAKE ONTARIO PLAIN & COAST AREA:			
Jordan Pond Shores	15	Lincoln, private	2nd growth Red Oak, White Oak, Hickory Forest
Jordan Valley Bluffs	30	Lincoln, private	2nd growth Red Oak, White Oak, Red Cedar
Burgoyne Woods City Park	60	St. Cath., public	60 yr. old White Ash, Sugar Maple, Red Oak Forest

21 SITES TOTAL ACRES =	415	11 public/nonprofit	Scattered Old Growth survivors in 5 2nd-growth sites. 4 very mature 2nd growth sites
		10 private	will become 2dary Old Growth in 25 yrs. 3 private sites should be permanently protected.

Appendix C

Project-Related Old growth Forests Discovered Outside the Niagara Peninsula

Because word has spread about this project and its success in finding Old growth Forests, this investigator has received requests for my expertise from naturalists, botanists and university-associated people to visit or find potential sites in neighboring regions of Southern Ontario. As a result, I volunteered my time and service to travel to explore for Old growth, or survey their sites to determine if they are Old growth Forests.

As a result of these visits, the existence of 5 more Old growth Forests are now confirmed in Southern Ontario; 3 were discovered and 2 were confirmed. Their brief descriptions follow:

Homer Watson Park – When this investigator was invited to speak at the University of Guelph earlier in 2004, the university sponsors of the lecture (and field trip) asked if I could find any Old growth Forests in the Guelph area for them to visit and study for field trips after I had left. Homer Watson City Park, located in southern Kitchener along the Grand River, turned out to have at least 15 acres of high quality ancient forest, probably much more. Old Growth Sugar Maple, White Ash, White Pine, Hemlock, Red Oak and other species displayed a wide range of Old growth characteristics, ideal for study. The other two sites documented for this visit are:

Rockwood Lake Conservation Area – This extensive property, known for its glacial pot holes, has a large lake with limestone cliffs rising out of it. Numerous Old growth Northern White Cedars grow on these cliffs. Thus, this is a site that is not along the Niagara Escarpment that nevertheless has ancient cliff Cedars.

Crawford Lake Conservation Area – Crawford Lake is most famous as meromictic lake, a very rare type of lake which is very deep and whose waters never turn over and mix like all other lakes do. A boardwalk takes walkers around the margin of the lake, avoiding the boggy and rough terrain. It also takes the visitors through a continuous corridor of Old growth Northern White Cedars that ring the lake. The fact that they were ancient, while obvious to this investigator, was never mentioned in any of the literature or well-prepared informational plaques along the route.

Tansley Hemlock Forest – Botanists from the Hamilton area requested that I visit two potential Old growth sites. This 10-acre site turned out to be ancient. It is located next to Bronte Creek Conservation Area. It was unclear if it was part of this public property, or if it was privately owned. Among its 9 Old growth tree species, Hemlock (up to 235 years old) and Sugar Maple (up to 300 years old) were the dominant trees. The other ancient species were Red and White Oak, Beech, Black Cherry, Butternut, Hop Hornbeam and Northern White Cedar. An unusually old Paper Birch, 120 to 150 years old, was found.

Clear Creek Grove (Norfolk County) – Botanists from Norfolk County requested that I come as quickly as possible to assess this 12-acre private grove, which was in danger of being sold to a developer. They felt that if it was identified as Old Growth, it would strengthen their case to justify its purchase by a land trust. Their judgment that it was Old growth was correct. It was an ancient Sugar Maple-Beech-Hemlock Forest, with trees as old as 230 years old. An interesting aspect was the raptor nest, possibly a goshawk's, in a large tree on the forest's margin.

Appendix D

Project Tree* Species

Common Names and Scientific Names

Bold = recorded as Old Growth in this project

* also includes a shrub and 2 vines that become old growth

Ailanthus(Tree of Heaven)	*Ailanthus altissima*
Ash, Black	*Fraxinus nigra*
Ash, Red (var. of Green Ash)	*Fraxinus pennsylvanica*
Ash, White	*Fraxinus americana*
Basswood	*Tilia americana*
Beech, American	*Fagus grandifolia*
Birch, Paper	*Betula papyrifera*
Birch, Yellow	*Betula allegheniensis*
Black Gum (Tupelo)	*Nyssa sylvatica*
Buckeye, Ohio	*Aesculus ohioense*
Buckthorn, Eur.	*Rhamnus frangula*
Butternut	*Juglans cinerea*
Cedar, E. Red	*Juniperus virginiana*
Cedar, No. White	*Thuja occidentalis*
Cherry, Black	*Prunus serotina*
Cherry, Choke	*Prunus virginiana*
Cherry, Mahaleb	*Prunus mahaleb*
Cherry, Sweet (Mazzard)	*Prunus avium*
Chestnut, American	*Castanea dentata*
Dogwood, Flowering	*Cornus florida*
Dogwood, Pagoda	*Cornus alterniflora*
Elm, Red	*Ulmus rubra*
Elm, White	*Ulmus americana*
Hawthorn, Cockspur	*Crataegus crus-gallis*
Hemlock, Eastern	*Tsuga canadensis*
Hickory, Bitternut	*Carya cordiformis*
Hickory, Pignut	*Carya ovata*
Hickory, Shagbark	*Carya glabra*
Hickory, Shellbark	*Carya laciniosa*
Hickory, Sweet Pignut	*Carya ovata var. ovalis*
Holly, Winterberry	*Ilex verticillata*
Hop Tree	*Ptelea trilfolia*
Hornbeam, American	*Carpinus americana*
Hornbeam, Hop	*Ostrya virginiana*
Horsechestnut	*Aesculus hippocastanoides*
Locust, Black	*Robinia pseudoacacia*
Magnolia, Cucumber	*Magnolia acuminata*
Maple, Black	*Acer nigrum*
Maple, Mountain	*Acer spicatum*
Maple, Norway	*Acer platanoides*
Maple, Red	*Acer rubrum*
Maple, Silver	*Acer saccharinum*
Maple, Sugar	*Acer saccharum*
Mulberry, Red	*Morus rubrum*
Mulberry, White	*Morus alba*
Oak, Black	*Quercus velutina*
Oak, Bur	*Quercus macrocarpa*
Oak, Chinkapin	*Quercus muehlenbergii*
Oak, Hill's	*Quercus ellip soidalis*
Oak, No. Red	*Quercus borealis*
Oak, Pin	*Quercus palustris*
Oak, Scarlet	*Quercus coccinea*
Oak, Shumard	*Quercus shumardii*
Oak, Swamp	*Quercus bicolor*
Oak, White	*Quercus alba*
Pawpaw	*Asimina triloba*
Pear, Common	*Pyrus communis*
Pine, Scots	*Pinus sylvestris*
Pine, White	*Pinus strobus*
Plum, Canada	*Prunus canadensis*
Poison Ivy (vine)	*Rhus toxicodendron*
Poplar, White	*Populus alba*
Sassafras	*Sassafras albidum*
Serviceberry, Downy	*Amelanchier arborea*
Spicebush	*Lindera benzoin* (recorded as tree)
Sumac, Staghorn	*Rhus typhina*
Sycamore	*Platanus occidentalis*
Tulip-Tree	*Liriodendron tulipifera*
Virginia Creeper	*Parthenocissus virginiana* (vine)
Walnut, Black	*Juglans nigra*
Willow, Black	*Salix nigrum*
Willow, White/Crack hybrid	*Salix alba/fragilis*
Witch Hazel	*Hamamaelis virginiana*
Yew, Canada	*Taxus canadensis* (shrub)

Total no. tree species in eastern Niagara Peninsula recorded to date as Old Growth = **47 species**