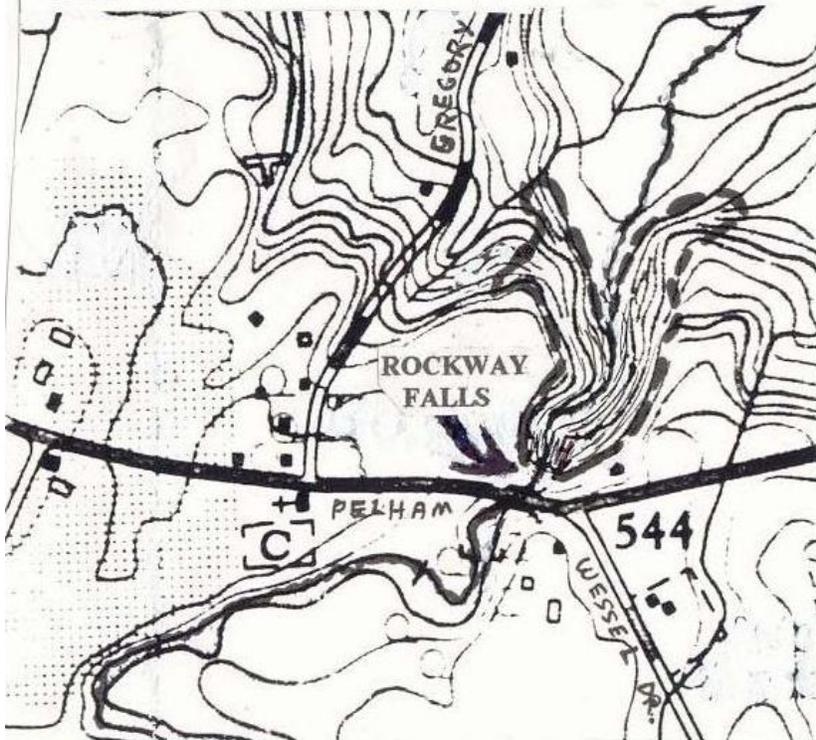




**ROCKWAY FALLS GORGE  
OLD GROWTH FOREST**



(old growth area of gorge is within white dotted area on aerial photo, within black dashed zone on map)

## Rockway Falls Gorge

Deep inside the rugged gorge of Rockway Falls, 7 species of Carolinian trees that are Old growth line the shore and rocky slopes around Fifteen-Mile Creek. No single tree species dominates. Besides

ancient Black Walnut, Basswood, Hemlock, White Ash, Sugar and Red Maple, there is uncommon Butternut (and very rare as Old Growth), and even a 250-year old Sycamore. Wild Ginger and the rare Maidenhair Spleenwort fern grow here. A Star-Nosed Mole was observed at close range for quite awhile.

<u>Old growth Tree Data:</u>	<u>Age (years)</u>	<u>Diameter</u>	<u>Comment</u>
	<u>Range</u>	<u>Range</u>	
Sugar Maple	150-200	20-34"	Mostly on slopes
Hemlock	200-240	20-28"	Mostly on slopes
Red Maple	150-160	18-26"	
Butternut	170?	20-24"	
Sycamore	180-250	20-32"	
White Ash	150-180	24-28"	Log ring count: 18" diam.=165 yrs
Basswood	200	24"	Unusually gnarled trunk
Black Walnut	180	30"	Grows on gorge bottom



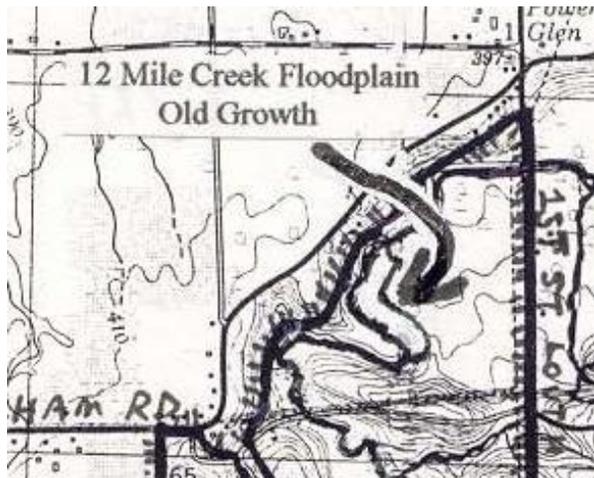
Rockway Falls



Rockaway Falls – Sugar Maple

## 12-Mile Creek Floodplain Forest

This is the Niagara Region's only example (so far) of Old Growth in a river floodplain forest. Specifically, it is a mix of Old Growth & mature Second-growth trees. They grow along a quarter-mile stretch of 12-Mile Creek, which is paralleled by a side-trail of the Bruce Trail in the northernmost section of Short Hills Provincial Park. This 4-acre riparian grove is comprised of 10 species of Old growth trees, up to 250 years old. It is notable for large specimens of Black Walnut, White Pine, Bitternut, White Ash, and Beech.



This forest has a complex makeup. The northern portion was probably located near a settler's homestead, since one or more of the largest, open-grown White Pines and Black Walnuts may have been planted, or at least tended. These and other natural Old growth trees are scattered in clusters in a relatively open Second-growth forest. Maximum ages are 180 to 200 years, possibly indicating the date when the first settler cleared the forest at this specific location. If so, these trees are Secondary Old Growth.

The southern portion is older and more natural. It appears to be a 50% mix of Original Old growth trees and mature Second-growth trees. The last selective cutting was light and preceded 1900. Within 50 years, both sections will evolve to quality Old growth Forest.

<u>Old growth Tree Data:</u>	<u>Age (years)</u>	<u>Diameter</u>	<u>Comment</u>
	<u>Range</u>	<u>Range</u>	
Black Walnut	170-190	25-42"	Some of the largest are associated with former homesteads
Bitternut Hickory	150-200	20-27.5"	Largest hickory is next to largest ash
White Ash	150-200	24-37.7"	Log ring count: 18" diam.=165 yrs
Red Cedar	200	24"	Open-grown branches = grew in field
E. White Pine	170-180	24-36"	Some of largest associated with former homesteads; others natural
Beech	180-200	15-40"	On creek bank – unusual for Beech
White Oak	180-200	16"	Log ring count: 14" diam.=175 yrs
Black Oak	150	20-28"	Slender due to poor growing conditions for this upland tree
Hemlock	200-250	20-28"	Mostly downstream portion
Hop Hornbeam	250	18"	Mostly on slopes
			Very large; grows inside forest away from creek in downstream portion



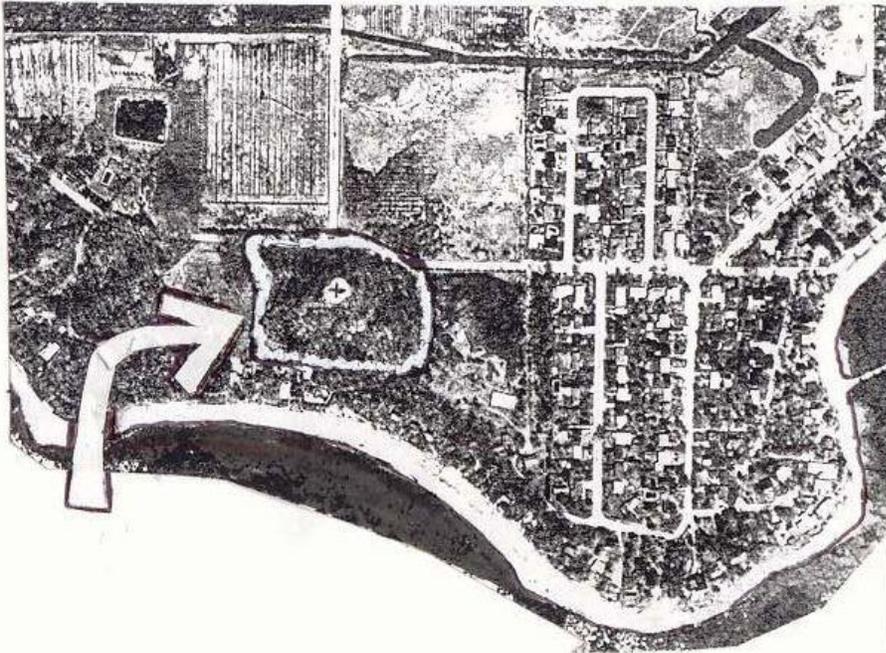
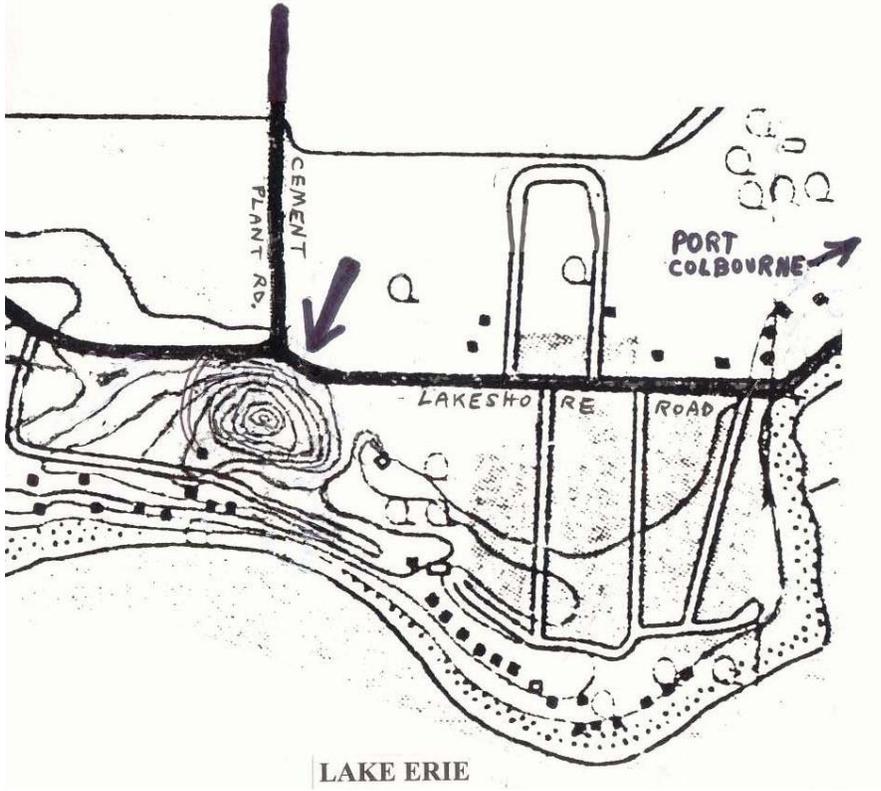
12-Mile Creek Floodplain Forest – White Ash and Bitternut Hickory



12-mile Creek Floodplain Forest – Carving Dated 1906

# SUGAR LOAF HILL OLD GROWTH GROVE

(outlined in white)  
in aerial photo



LAKE ERIE

## Sugar Loaf Hill

Sugar Loaf Hill is one of only three Lake Erie coastal dunes known to be covered by Old Growth. The 100-foot tall sand peak is also one of its steepest and most cone-shaped dunes (hence its name). Yet some of its trees get large, such as Red Oak and Sugar Maple. Crowning its summit is a stocky Red Oak with stout, spreading boughs. During the visit, a raccoon was observed sleeping in the massive crotch of its boughs.

Ancient Hemlocks grow on the protected north slope. It is extremely rare for this Old Growth Hemlock to be found on sand dunes. Near the summit grows an unusual tree, what appears to be a hybrid Red/White Mulberry (24" diam.). The rare shrub Bristly Greenbrier (*Smilax hispida*) also grows near the top.

Located within the city limits of the City of Port Colbourne, it lies only two miles east of its downtown and the entrance of the bustling Welland Canal. Being privately owned, the forest's protection status is tenuous. Except for the three Old growth dunes found during this survey, the original forest (or all of the forest on some dunes) on Lake Erie sand dunes has disappeared in the region covered by this project. Even the future of the dune itself cannot be granted. Neighboring dunes immediately to the west have been mined away to make space for housing construction. Research into City and Regional zoning and tree by-laws, and enforcement of those by-laws, is needed to get a realistic picture of any potential threat. Education of municipal officials and recommendations on how to strengthen the bylaws (and their enforcement) would be the logical next step. If it remains under private ownership, without any action, loss of Sugar Loaf Hill and its ancient forest is not a matter of "if" but "when?"

<u>Old growth Tree Data:</u>	<u>Age (years)</u>	<u>Diameter</u>	<u>Comment</u>
	<u>Range</u>	<u>Range</u>	
No. Red Oak	150-165	25-32"	Extremely rare in this habitat
Sugar Maple	165-230	20-26"	
Hemlock	170-200+	14"	
Pignut Hickory	175-190	18"	
Hop Hornbeam	170	15"	
Basswood	150-170	20-24"	

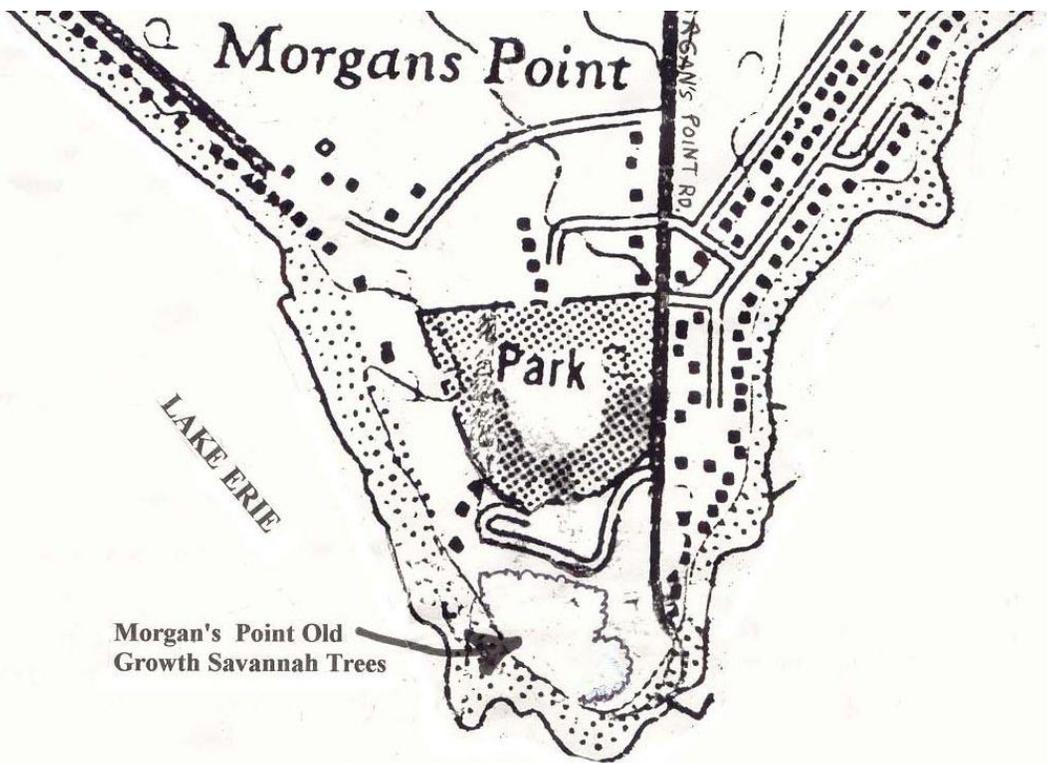
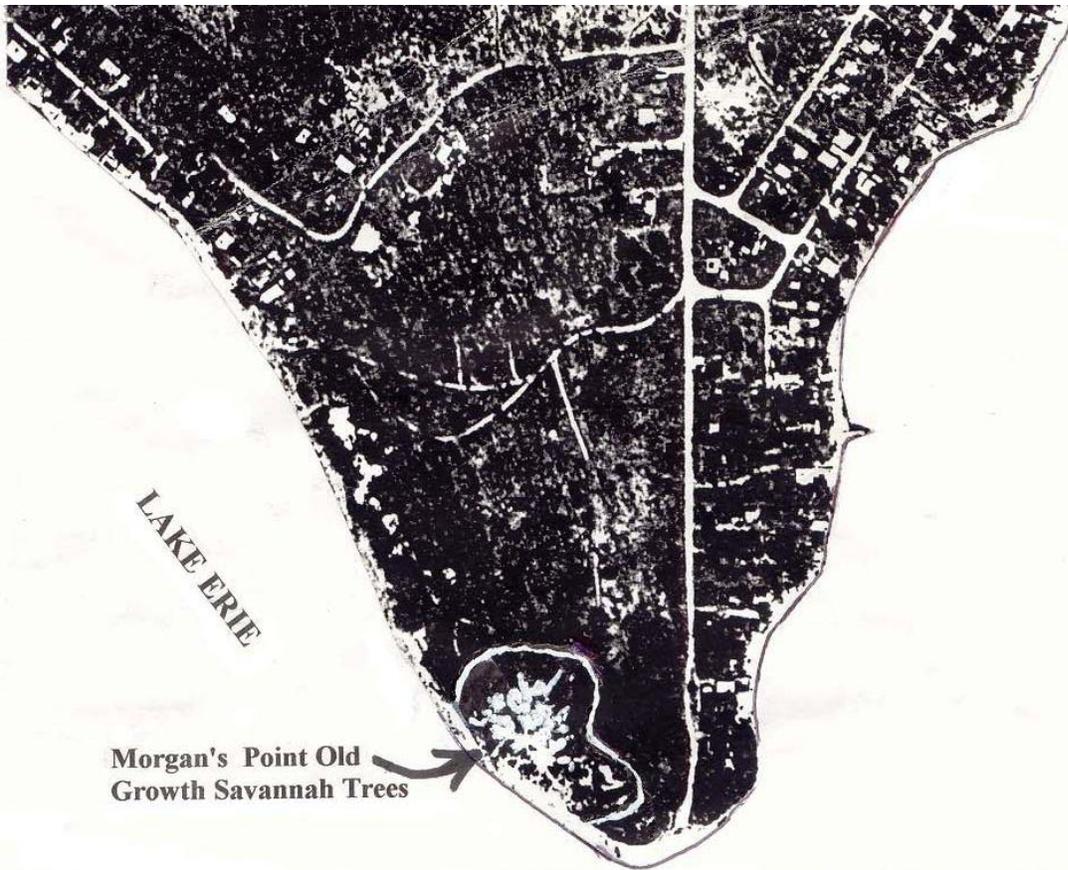
Other Trees: Black Walnut (100 yrs old, 18" diam.); hybrid Sugar/Black Maple; Rare hybrid Red/White Mulberry  
 Other plants noted: Rare Bristly Greenbrier; Bladdernut, Marginal Wood Fern



Sugar Loaf Hill - Spy



Sugar Loaf Hill



## Morgan's Point

Morgan's Point is Lake Erie's easternmost lakeshore Savannah grove. Some of the Old growth trees are remarkably large, up to 73" diameter and 300 years old. They do not grow in closed forests, but in open clusters or are widely scattered and surrounded by lawn, meadow or thicket. Most of the large trees are stately Black Walnuts, with 4 notably old (more than 300 years) Sugar Maples, a single record-size Red Oak, 2 possibly Old growth Cottonwoods, and several ancient Hop Hornbeams. Of particular note is the thriving Old growth colony of Canada Yew (a shrub). This is extremely rare to find on sand dunes.

Originally, a rich Savannah prairie community of native grasses and a myriad of wildflowers once thrived between the giant trees. However, this was replaced long ago by the cultivated and mowed non-native meadows we see today. However, a few individuals of the prairie grass and wildflower species still survive. Two examples are Little Blue-eyed Grass (*Sisyrinchium*) and Big Bluestem Grass (*Andropogon scoparius*), which were

noticed casually during a single visit by a colleague. A formal botanical search would be expected to turn up more.

The Savannah trees occupy the interior of the point, while a corridor of scrubby young forest parallels the margin of the point, just inland from the shoreline. Red Oaks and tall Cottonwoods dominate the young forest along the west shore. A Scots Pine plantation occupies part of the east side, inland from the beach. Of note is the striking European White Poplar, which grows on the scrubby gravel beach area on the southeast side.

In recent decades, Morgan's Point was a private campground. Very recently, public funds were used to purchase it, and it is now a Town of Wainfleet Community Park. A new wooden boardwalk has been built around part of the point to prevent further dune erosion, and to allow the vegetation to restore itself. This site is an ideal place for a Savannah Restoration project. Hopefully, the transfer of the point to public ownership may make this a realistic proposal. Such a project is highly recommended.

### SAVANNAH

<u>Old growth Trees:</u>	<u>Age (years)</u>	<u>Diameter</u>	<u>Comment</u>
	<u>Range</u>	<u>Range</u>	
Black Walnut	150-200	30"	21 large individuals
Sugar Maple	300+	20-34"	4 ultra-ancient ones found
No. Red Oak	350	73"	One of largest trees found during survey; however, nearly dead
Hop Hornbeam	230-250	8-15"	Several found
Cottonwood	120-150+?	40-48"	2 possible old growth individuals

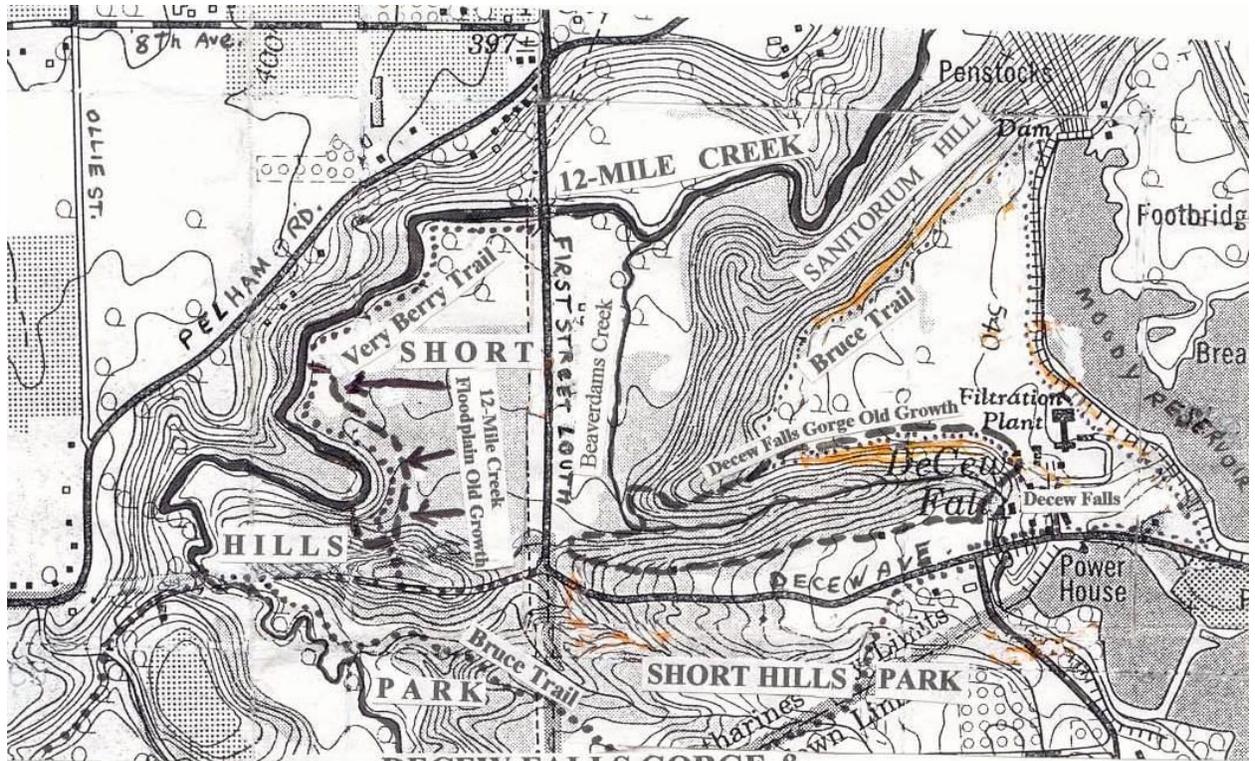
Non-Old growth Trees: Cottonwood (24-30" diam., 75-100 yrs, tall, numerous); E. Red Cedar (10" diam.)  
Eur. White Poplar, Scots Pine plantation



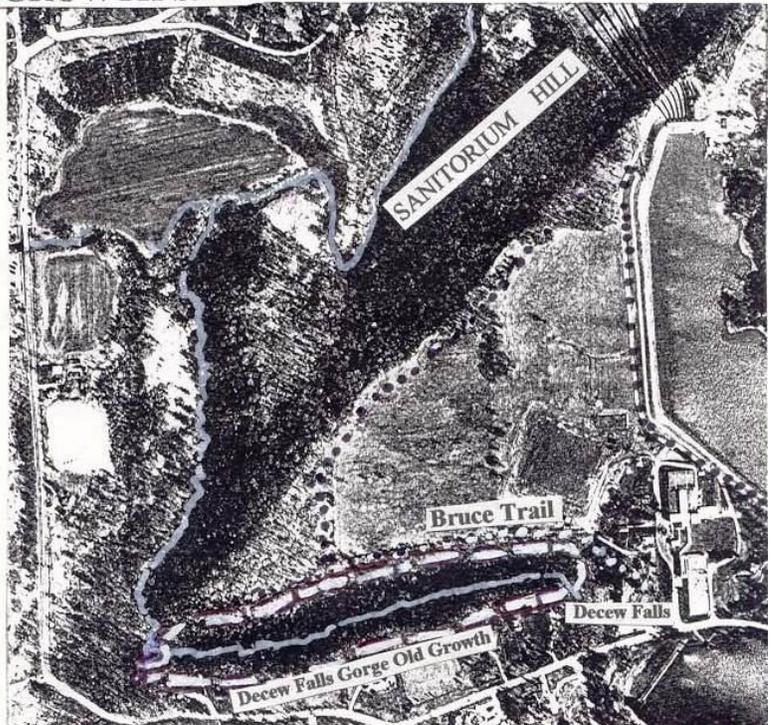
Morgan's Point – Northern Red Oak



Morgan's Point – Black Walnuts



**DECEW FALLS GORGE &  
12-MILE CREEK FLOODPLAIN FOREST  
OLD GROWTH SITES**



## Decew Falls Gorge

The first waterfall gorge of the Niagara Escarpment east of Niagara Falls is Decew Falls Gorge. It contains a 27-acre corridor of Old growth Carolinian Forest that fills the 2000-foot long, 130-foot deep gorge from end to end and from one rim to the opposite rim.

The steep slopes have more impressive trees than the bottom. Some of the trees attain very large size, especially the oaks and maples that grow on the overhanging rim, projecting their hulking torsos over the great drop below. Growing on the slopes are numerous large Black Walnuts and two trees rarely seen as Old Growth: “Regionally Rare” Chinkapin Oak and Flowering Dogwood.

Aside from Old Growth, it is also a refuge for rare plants. According to the “*Ecological Survey of the Niagara Escarpment Biosphere Reserve*,” 3 Nationally Threatened species, Red Mulberry, American Chestnut, and Ginseng, grow here. It also has the largest colony of the Nationally Rare Slender Muhly Grass (*Muhlenbergia tenuiflora*) on the Niagara Peninsula.

Finding Old growth broadleaf forest inside the gorge was not the primary goal for the trip to Decew Falls Gorge. The goal was to find cliff-dwelling ancient cedars, which have so far only been found on vertical cliffs higher than 50 feet tall. Along the Niagara Escarpment, only stepped ledges or vertical cliffs less than 25 feet tall were found to the west of the Niagara Gorge, up to this point. The 66-foot tall Decew Falls creates the first high, vertical cliff walls for potential cliff cedar habitat. However, no cedars were found. The possible explanation is that the only appropriately tall cliffs were restricted to the amphitheatre of Decew Falls. The severe,

periodic flooding of Twelve Mile Creek erodes the cliff bases sufficiently over time, leading to sloughing and collapsing of rock. Thus, no tree would remain for long on these cliffs.

The survey then turned its attention to the gorge downstream. The vertical cliffs in the gorge downstream from the waterfall amphitheatre are no taller than 25 feet, so no cedars were expected. However, high quality ancient forest was not expected. Finding Old growth broadleaf forest in this gorge led to the realization that the other waterfall gorges immediately to the west could also harbour Old Growth. This turned out to be true.

The waterfall and the historic Morningstar Mill building are part of Decew Falls Conservation Area, which also includes the cliff-lined amphitheatre immediately below the falls. The public corridor of Bruce Trail follows the entire length of the north rim, but it is outside the gorge. It turns out the entire gorge downstream from amphitheatre Decew Falls is privately-owned. **This makes it the only significant gorge on the Niagara Escarpment west of Hamilton that is still privately owned.** As a result, its forest remains unprotected. Considering that it is surrounded on three sides by public conservation land, including Short Hills Provincial Park abutting the private property along the south side, it clearly should be recommended as a high priority for acquisition. The ecological survey report referred to above makes the same recommendation.

Although the Bruce Trail runs along its north rim, it provides neither a view into the gorge or any clue that there is ancient forest below. There is no safe or easy access into the gorge from the trail or anywhere else except by heading downstream past where it ends, walking down to stream level, and walking upstream into the gorge.

Old growth Tree Data:	Age (years)	Diameter	Comment
	Range	Range	
Sugar Maple	225-250	20-38"	Both in gorge & on gorge rim
Hemlock	180-300+	20-26"	Stump ring count: 13" diam.=260 yrs
Chinkapin Oak	200-240	35"	Very prominent old growth bark
No. Red Oak	180-230	36-45"	Projects out from gorge rim
White Oak	230-260	40"	Projects out from gorge rim
Black Oak	170-200	28"	
Black Walnut	175-200	30"	10 individuals
Flowering Dogwood	150-175	8"	

Non-Old Growth Trees: Nationally Rare Tulip Tree; Black Maple, Red Elm, Hop Hornbeam, Beech, Yellow Birch  
 Other Plants: Wild Ginger, White Snakeroot, Yellow Jewelweed, White Baneberry, False Solomon’s Seal



Decew Falls



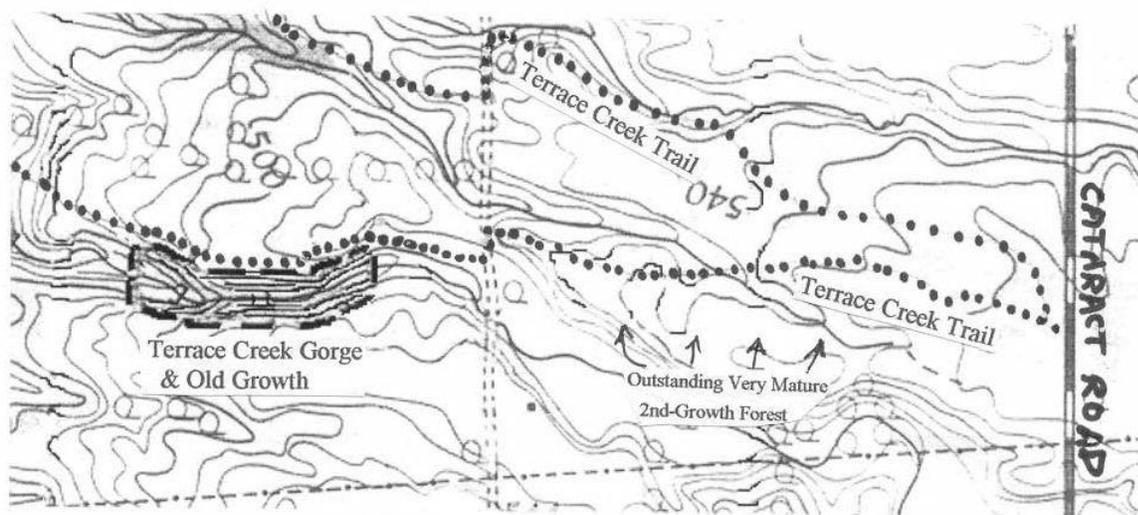
Decew Falls Gorge – Beech



Decew Falls Gorge – Black Walnut



Decew Falls Gorge – Cliff Oaks



**TERRACE CREEK GORGE OLD GROWTH**  
of Short Hills Provincial Park

**Terrace Creek Gorge**

One of the likeliest places to find ancient forest is around waterfalls and along their gorges. This pattern held true for Terrace Creek Gorge, in the central eastern section of Short Hills Provincial Park. A 4-acre Old growth Forest lines the cliffs and very steep slopes of this narrow, 75 ft.-deep gorge, which also features three seasonal cascades. The Terrace Creek Trail follows the entire margin of the gorge, providing excellent views into it. Besides Swayze Falls Gorge, this gorge is the only other place in Short Hills Park where the Niagara Escarpment is exposed at the surface.

Sugar Maple, Hemlock, and Beech attain great age (as much as 230 to more than 300 years) and Red Oak and Sugar Maple become as large as 40-42" diameter. The Sugar Maples are notable for their especially shaggy and balding old growth bark.

An 18-inch American Chestnut stump, dating from the 1930s, was still in good condition.

About 1000 feet along the Terrace Creek Trail to the east of the gorge is a very mature, second-growth forest with trees in the 100 to 120 year range that is superlative for several reasons. First, Old growth individual trees, 150-165 years old, are scattered throughout the woods. Second, it is filled with towering, champion-tall White Ash and Tulip Trees. Some have lowest boughs as high as 75 feet up, and may reach 120 feet tall (or more?). Tall Red oak, Beech, Sugar Maple, and Basswood also grow here. Third, Nationally Rare White Wood Aster and other rare plants have been documented here. Ideally, accurate measurements of tree heights may result in new records for certain species. Also, in several decades, it will evolve into an excellent example of Secondary Old growth Forest. Therefore, setting up research to establish ecological baselines now would enable scientists to observe the changes that occur as the shift takes place.

<u>Old growth Tree Data:</u>	<u>Age (years)</u>	<u>Diameter</u>	<u>Comment</u>
	<u>Range</u>	<u>Range</u>	
Sugar Maple	225-270	35-40"	On very steep gorge slopes Very bald, shaggy, staghorn crown
Hemlock	180-300+	20-26"	
Red Maple	150-165	35"	
No. Red Oak	225	42"	
Beech	200-230	25"	
Black Oak	170-200	28"	
Basswood	150-160	14"	Slender but slow-growing & old
Flowering Dogwood	150-175	8"	



Terrace Creek Gorge



Terrace Creek Gorge



## 15-Mile Pond Bluffs

Scenic 15-Mile Pond, the impoundment of 15-Mile Creek just before it reaches Lake Ontario, is well-known because the Queen Elizabeth Way crosses it between Exit 51 and 54. Along its shore are low bluffs covered by Carolinian Oak Forests. The

survey of the 1.5 mile long shore line found large, ancient White, Red and Black Oaks, White Pines, and Willows, scattered within Second-Growth Forest. It's unclear why these large trees were not cut during the logging period a century ago. The data below was counted only for the ¾ mile long bluff on the east side of the pond.

<u>HERITAGE Tree Data</u>	<u># on East Shore</u>	<u>Typical Age Range (yrs)</u>
White Oak	7	225-240
White Pine	3	180-200
Red Oak	1	200
Black Oak	1	220
Black Willow (50-61" diam.)	3	100?

### Comments

This can be considered Old Growth for this species, since its maximum longevity might be 125 yrs



15-Mile Pond



15-Mile Pond Bluffs – White Oak

## Woodland Elementary School Grove

The Woodland Elementary School Grove is the Niagara Peninsula's most impressive and diverse Old growth Grove of 3 acres or less. Its location is surprising, since it abuts a service road of the Queen Elizabeth Way and another major regional road. It is adjacent to the parking lot of the Woodland Elementary School, which owns it. This ancient Carolinian forest boasts some of this survey's largest oaks (to 52.5" diam.). Until several years ago, it also had Canada's largest living American Chestnut (subsequently succumbed to the blight). It also boasts very high tree diversity, 17 species, 9 which are Old Growth. Three of these trees are rarely encountered in Northeast North America as Old Growth: Sassafras, Hop Hornbeam, and Flowering Dogwood. Its herbaceous plant diversity is impressive. It is carpeted with Nationally Rare White Wood Aster, as well as a host of other wildflowers.

Its diversity and other outstanding features are completely unexpected considering the grove's tiny size, urban location, fragmentation, and sterile surroundings. These factors supposed to reduce biodiversity, and cause loss of rare species, yet this site retains these features somehow. Knowledge of all these superlatives will be shared with the school's management. Old growth Forests provide superb – and new -- education opportunities to enhance the science, environmental and history curriculum, especially since it is next to this school. Unfortunately, the school eliminated the eastern end of the grove about three years ago to construct a play area. Ironically, it is next to the largest of the oaks. It is unclear if the school management knew the value of this grove at the time. It is also unclear if they have any plans in place to protect the grove permanently or not. Without permanent legal protection, no one can predict what kind of poor decisions a future board can make (based on recent examples elsewhere).

<u>Giant Red Oaks data:</u>	<u>Diameter</u>	<u>Age</u>	<u>Height</u>	<u>Spread</u>
Giant at east tip of grove:	52.5"	200 yrs	113 ft	80 ft. = 285 Big-Tree Points
Giant at west section:	51.2"	200 yrs		
Giant in central east part:	41"	200 yrs		
Giant at west tip of grove:	41"	180 yrs		
Giant in middle of grove:	36"	180 yrs		

<u>Old growth Tree Data:</u>	<u>Age (years)</u>	<u>Diameter</u>	<u>Comment</u>
	<u>Range</u>	<u>Range</u>	
No. Red Oak	180-200	32-52.5"	
Black Oak	185	28.5"	
Beech	150-200	20-34"	
Red Maple	175	33.2"	
Black Cherry	80-180	23.2-24.5"	Very shaggy & bald
Basswood	200	18-26"	
Flowering Dogwood	160	6"	
Hop Hornbeam	180	8"	
Sassafras	150-160	18-19"	

**Non-Old Growth:** White Ash = 24.5", Pignut Hickory, Sugar Maple 125 yrs, Tulip Tree 100 yrs, Red+/- White Elm, White Pine (one on edge 26" = 80 yr., Choke Cherry; Eur. Sweet Cherry, Downy Serviceberry, Hybrid Red/Silver Maple (Freemans Maple);

**Shrubs:** Maple Viburnum; Poison Ivy; Eur. Hazelnut; Burning Bush

**Herbaceous Plants:** Nationally Rare White Wood Aster; Violet; Osmorhiza; False Solomons Seal; Big Leaf Aster; Wild Geranium; Baneberry; Purple Flowering Raspberry; Puffballs