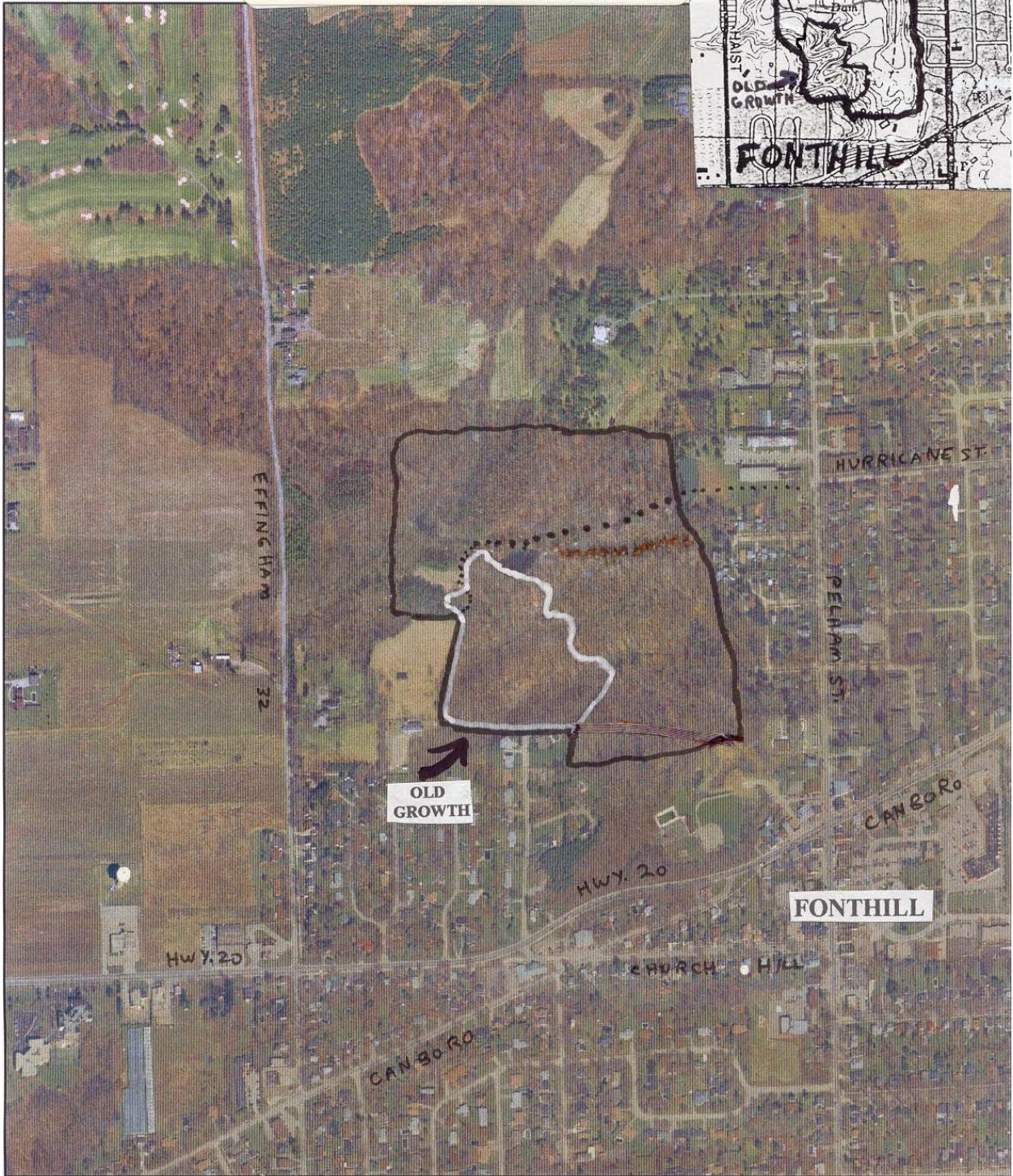
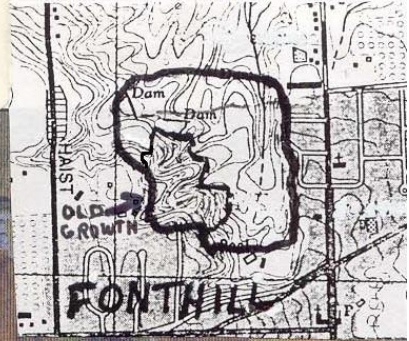




Balls Falls – Tall Forest

LATHROP PRESERVE OLD GROWTH FOREST



225 112.5 0 225 Meters

LATHROP PRESERVE

The Lathrop Preserve harbours about 12 acres of superlative Old growth Carolinian Forest in its southwest corner. This forest is tied for third greatest diversity of Old growth tree species (16) recorded in Northeast North America. It is also Canada's 2nd only site for Old Growth Scarlet Oak trees. Further, sizable American Chestnuts, a Nationally Threatened

tree, grows here in this hushed primeval forest of deep ravines in the Fonthill Kame Formation.

Located on the northwest margin of the Village of Fonthill, the property was recently donated to the Nature Conservancy of Canada. The entrance trail follows a very old, abandoned railroad grade, now surrounded by mature forest. It is surprising and puzzling that the ancient forest has survived to the present, since it starts only a short distance to the south of the old railroad route.

<u>Old growth Tree Data:</u>	<u>Age (years)</u> <u>Range</u>	<u>Diameter</u> <u>Range</u>	<u>Comment</u>
Sugar Maple	150-225	20-28"	Very shaggy bark
Bitternut Hickory	170-200?	20-28"	
Pignut Hickory	175-200	25"	
Black Walnut	150-230	24-30	
White Ash	150-175	24-32"	Moss grew up to 70' high
Beech	160-200	20-28	
Basswood	160-185	20-27"	
Tulip Tree	200-230	48"	Lowest bough was 70' high
Red Maple	165-200+	35"	A raccoon was living in crotch of tree about 50 ft. up
Butternut	180?	24"	Remarkably gnarled, with many old growth features
Scarlet Oak	150-160?	26.7-34.5"	
E. White Pine	140-150	29"	
Black Cherry	170	18"	
No. Red Oak	150	30"	
White Oak	220	27"	
Hop Hornbeam	200	9"	

Non-Old Growth Trees & Vines:

Amer. Chestnuts: 2 living (5+6" diam.). Large Chestnut stumps (36" diam., dating back to c. 1935). One 12 inch diam. Chestnut log (lying there since 1930s) had 115 annual rings. It was not at base of tree, so it gives no indication of age of former tree it came from, but indicates possible age of much larger Chestnuts, evidenced by their remains. Sassafras (14" diam.); Yellow Birch, Black Oak, Old Growth River Grape. Also Paper Birch just outside Old Growth Forest on north side (25" diam., 125 yrs old).

Notable Herbaceous Plants: Bloodroot, Wild Ginger, Christmas Fern, Maidenhair Fern, Zigzag Goldenrod



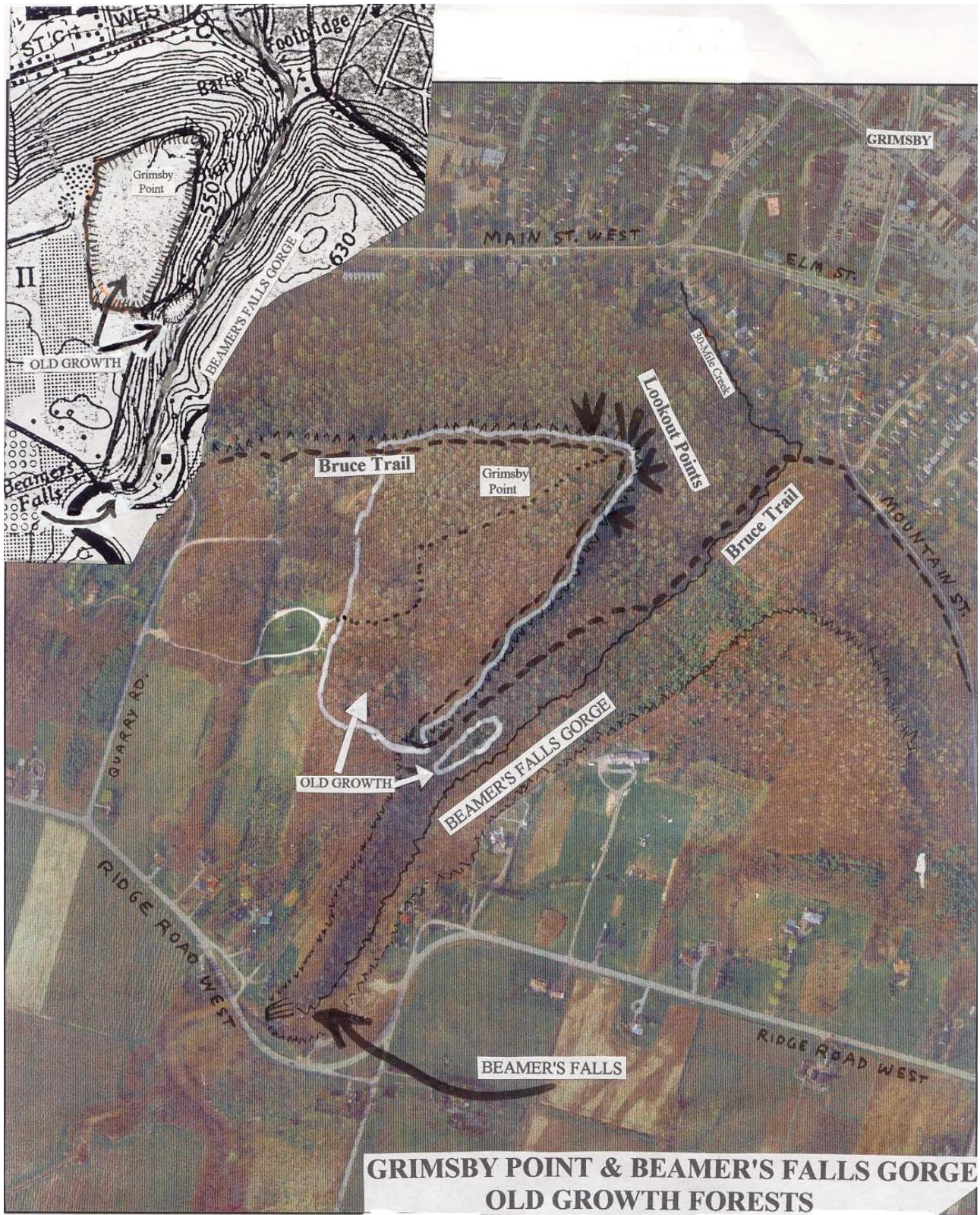
Lathrop – Butternut



Lathrop - Scarlet Oak



Lathrop - Tuliptree



**GRIMSBY POINT & BEAMER'S FALLS GORGE
OLD GROWTH FORESTS**



GRIMSBY POINT

Grimsby Point, the Niagara Escarpment's most protruding section between Hamilton and Niagara Gorge, is famed for its sweeping cliff-top vista and ultra-ancient cliff cedars. However, no one recognized that the broadleaf forest on the surrounding plateau top, including the vista area, is also ancient. This forest is remarkably diverse, with 14 tree species up to 300 years old. It has the third greatest Old growth tree diversity of all ancient forests discovered on the Niagara Peninsula to date. With 100-foot Beamers Falls and its gorge below, this outstanding Carolinian Old growth Forest is another jewel in the crown of one of Ontario's greatest scenic treasures.

The 10-acre ancient forest is part of the 127-acre Beamer Memorial Conservation Area. From the vista, Lake Ontario to the north is 400 feet below and the gorge of Beamers Falls gorge (also part of the Conservation Area), including the other ancient forest (described later), lie below to E and SE.

This vista is well-known as one of the region's best spring hawk-watching sites, where tens of thousands of raptors pass by. Not as well-known is that it is the Niagara Peninsula's best location to safely observe close-up (and touch) the extremely

ancient Northern White Cedars, some exceeding 500 years old, on the rim and safely accessible ledges below the rim. Many exhibit the classic bonsai appearance, others grow in unbelievably bizarre forms: intricately gnarled; intertwined and spiral-grained trunks; even upside-down; some thrive with only a narrow portion of trunk with living bark.

Just as this is an ideal place to see ancient cliff cedars, it is now also a superb place to experience an Old growth Carolinian Forest. A ¾-mile section of the Bruce Trail traverses the Grimsby Point Old growth Forest. The Lookout Trail loop, starting from the access parking lot, adds another ¾ mile (part coincides with the Bruce Trail) through the ancient forest.

Besides Old growth trees, rare shrubs were also recorded on the cliff rim: Low Serviceberry (*Amelanchier humilis*), Snowberry (*Symphoricarpos albus*), Buffaloberry (*Shepherdia canadensis*); and extremely rare Smooth Cliffbrake Fern (*Pellaea glabella*).

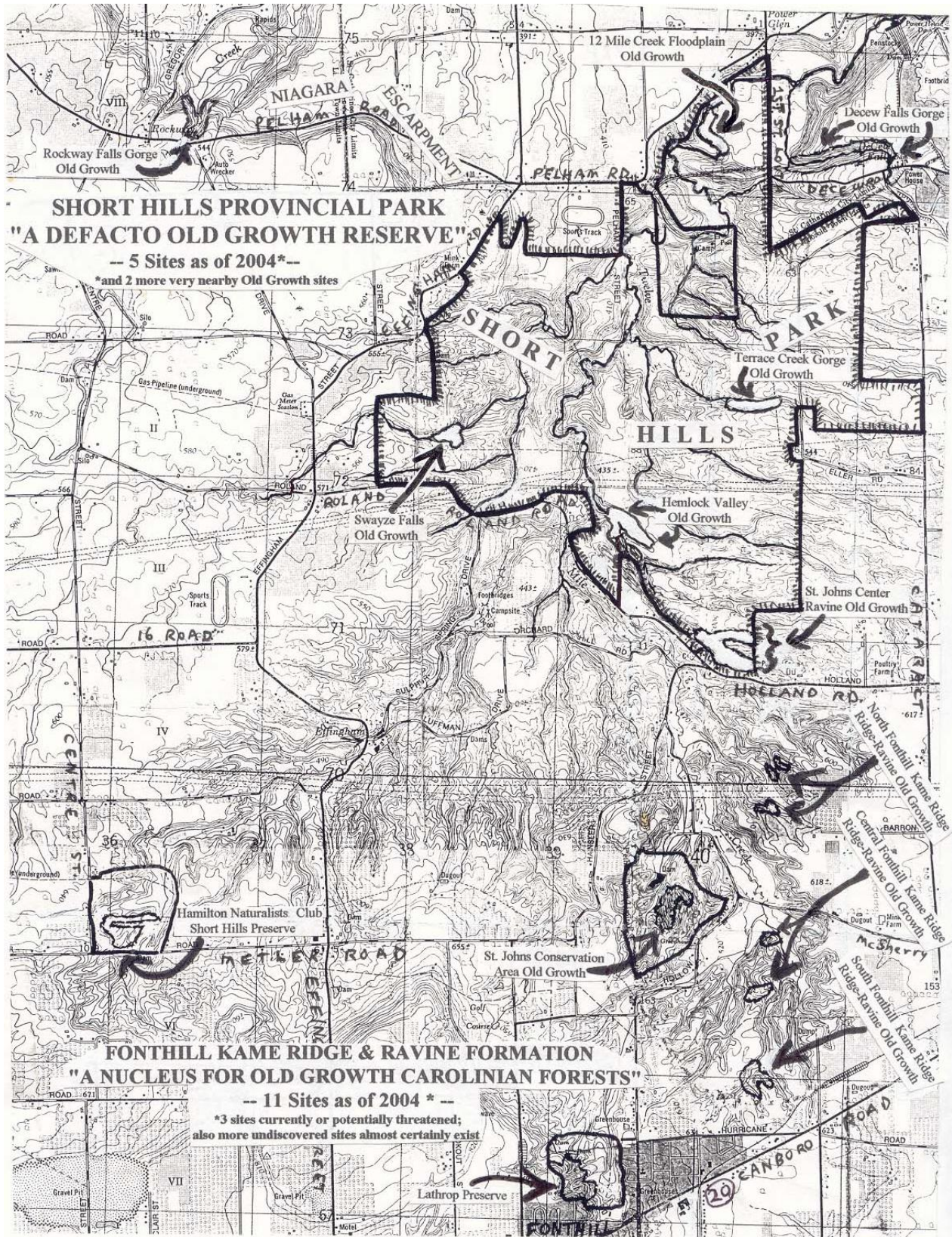
The Gibson family owned the site prior to transferring it to Regional Conservation Authority. Reportedly, they loved it and decided over the generations not to cut it.

<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	150-230	20-39"	Several stump/log ring counts used; Examples: 20 in. trail stump =230 yrs; 30" log=168 yrs; 18" log=176 yrs White Oak
	170-250+	20-32"	Log ring count used; 14" log=230 yrs
Black Oak	160-175	20-35"	
Sugar Maple	170-240	20-30"	
Bitternut Hickory	180-275	20-26"	Log ring count used; 17.5" log =254 yrs; 24" log ~275 yrs
Hemlock	180-275	20-25"	
White Ash	150-180	24-28"	
Beech	200-225	18-26"	
E. White Pine	140-175	14-18"	Log ring counts used; Examples: 14" log =160 yrs; 20" log 185 yrs.
Black Cherry	150-180	14-18"	
Hop Hornbeam	150-235	6-12"	Conspicuous staghorn crowns
No. White Cedar	150-500+	5-20"	Some grow in woods away from cliff. Log ring counts used; (both forest and cliff rim) 11 inch stump along trail in sunny spot =174 yrs
Flowering Dogwood	160	6"	Log ring count used
Mahaleb Cherry	150+	8"	Before 1850s, a cherry pit somehow germinated along the Bruce Trail. Extremely rare for a cultivated orchard cherry to escape & grow to be ancient in harsh natural habitat

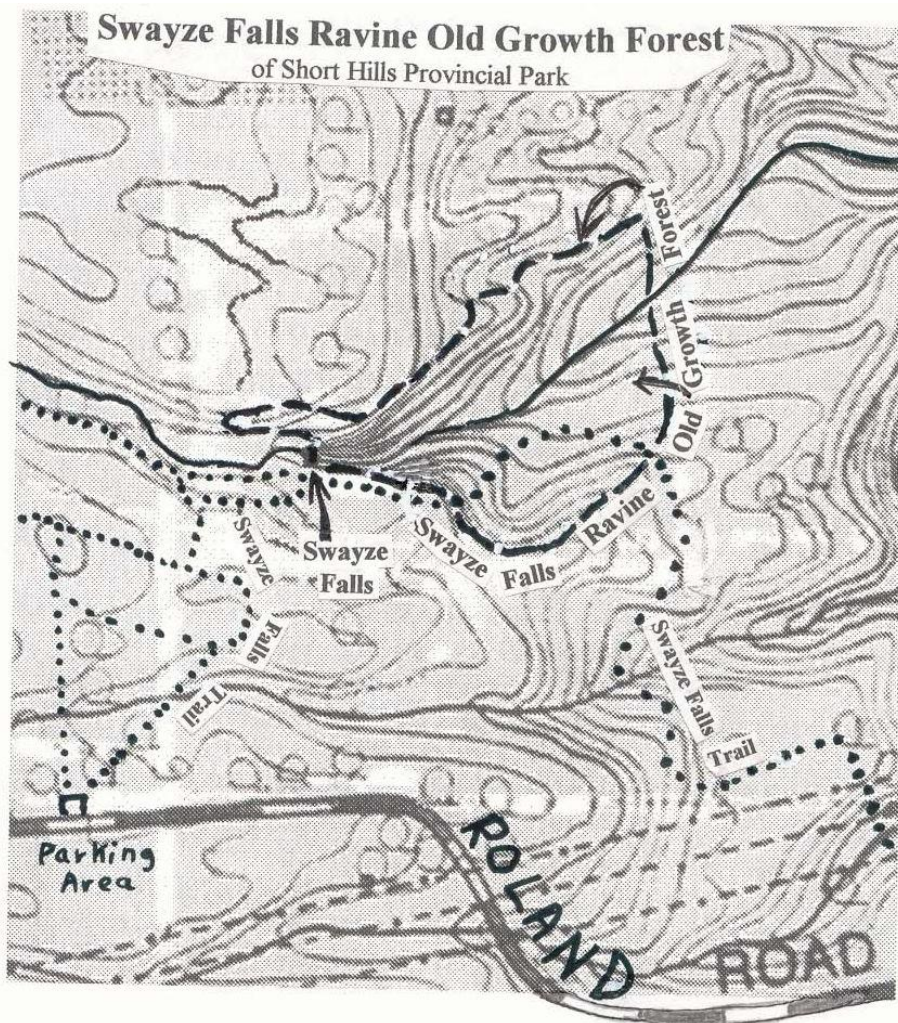
Non-Old Growth Trees: Pignut Hickory, Witch Hazel, American Chestnut stump (dating back to 1930s)



Grimsby Point – Northern Red Oak



Short Hills Provincial Park – Various old growth forests in the region



Swayze Falls Ravine

Few people who marvel at 60-foot Swayze Falls and its narrow gorge realize that ancient Black Walnuts -- more than twice the waterfall's height -- reside in its ravine below. The Sugar Maples (up to 240 years old), Bitternut Hickories and White Ashes soar almost as high, in what is one of Ontario's tallest broadleaf forests.

Swayze Falls is one of two places in Short Hills Provincial Park where the Niagara Escarpment is exposed. It has carved a very narrow gorge with few trees because floods sweep periodically everything away. But it quickly opens up into a less steep ravine with a flat bottom and rich, deep soils, perfect for growing tall trees. **The tallest tree that was measured, a 125-foot tall Black Walnut, surpasses the previous 124-foot record for the**

tallest Black Walnut in Northeast North America. Now it is second place with discovery of the 136.7-foot world's tallest Walnut (described previously) along the Niagara Gorge.

The 6-acre Swayze Falls Ravine Old growth Forest is also notable for its abundance of large, ancient Black Walnuts, a rare occurrence because they are eagerly sought after since they are North America's most commercially valuable timber tree species. Another notable tree is a 28-inch diameter Bitternut, unusually large for this tree in a forest nowadays. Because this forest has unusually tall trees, a separate effort was made to precisely measure their heights, using the Laser Rangefinder and Clinometer:

Black Walnut heights (feet): **125** (26.5-inch diam.), 121, 120.6, 120.1, 119.1, 119, 112, 109.7, 99

White Pine height (feet): 88

<u>Old growth Tree Data:</u>	<u>Age (years)</u>	<u>Diameter</u>	<u>Comment</u>
	<u>Range</u>	<u>Range</u>	
Black Walnut	150-190	20-31"	Lowest bough is 60 feet up
Basswood	160-175	20-35"	Lowest bough is 75 feet up*
Sugar Maple	170-240	20-39"	Unusually tall*
Bitternut Hickory	180-275	20-26"	Lowest bough is 75 feet up*
White Ash	170-225	24-40"	Lowest bough is 65 feet up*
Beech	200-225	18-36"	
Butternut	165?	28"	
E. White Pine	160	22"	

* these trees are notably tall enough that they should be accurately measured in the future

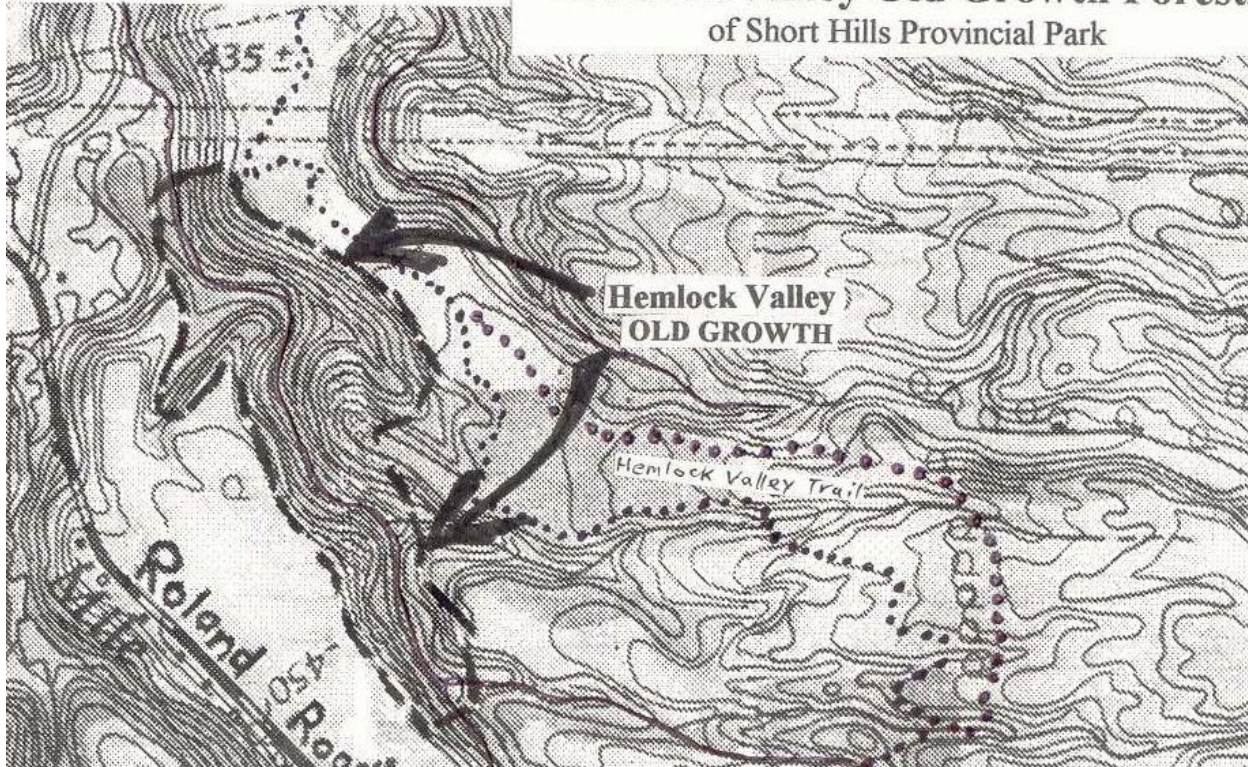


Swayze Falls – View into Canopy



Swayze Falls – Forest Scene

Hemlock Valley Old Growth Forest of Short Hills Provincial Park



Hemlock Valley

This 100-foot deep, winding Hemlock ravine in what is now Short Hills Provincial Park was always considered special, but now it is confirmed it is filled with Old growth Forest. Besides Hemlock (to 280 yrs. old), at least six broadleaf tree species also are ancient, clinging to steep, deeply shaded slopes overlooking cascades in one of the region's most secluded places. Because this ravine was physically challenging to explore, only part of it could be surveyed. Therefore, subsequent surveys will

undoubtedly add more Old Growth tree species and expand data on tree ages and size dimensions.

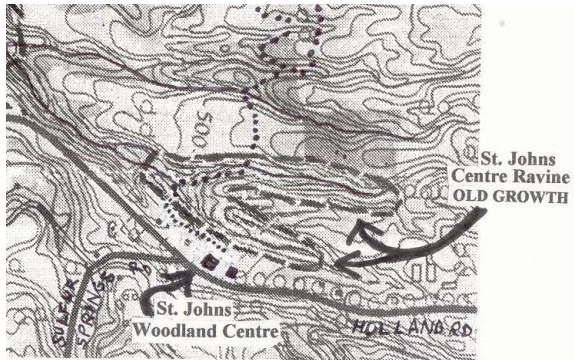
As its name indicates, Hemlock Valley's Old growth Forest fits the category of a Hemlock-Northern Hardwood Forest type, in contrast to the Carolinian Forest type represented by Swayze Falls Ravine Forest. One of the reasons why Short Hills Provincial Park is an ideal place to designate as an "Old Growth Forest Reserve" is because it has a variety of Old growth Forest types.

<u>Old growth Tree Data:</u>	<u>Age (years) Range</u>	<u>Diameter Range</u>	<u>Comment</u>
Hemlock	180-280	20-32"	
Sugar Maple	170-225	20-34"	Unusually tall
Beech	170-225	18-32"	
White Ash	170-200	24-34"	
No. Red Oak	160-175	28-30"	
Basswood	160-180	20-30"	
Bitternut Hickory	150-200	20-24"	On upper, less steep slopes



Hemlock Valley – Forest Scene

St. Johns Conservation Area (East Ravines)



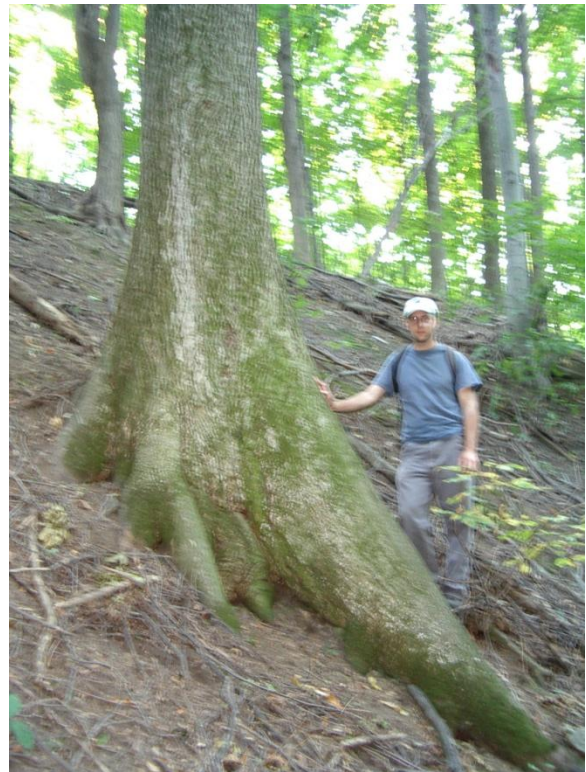
St. Johns Conservation Area, just southeast of Short Hills Provincial Park, has long been known for its beautiful, high quality, mature, second-growth Carolinian Forest, including its extremely diverse flora and fauna, many of them rare. Its Sassafras Trail is described in guide books as an ideal place to see this uncommon tree. As a result of this survey, visitors can now enjoy a 5-acre Old growth Forest.

One section of the Tulip Tree Trail passes through some of its large trees. The Old Growth extends to the east over two secluded sand ravines and ridges. As now appears to be typical of Carolinian Forests in this region, the forest is notably tall, with Tulip Tree, Hemlock, Sugar Maple, Pignut and Bitternut Hickories, Red Oak, and Beech among the more common species.

Besides the Nationally Rare Tulip Tree and Pignut Hickory, numerous other rare species have been recorded in this 76-acre Conservation Area or immediate vicinity. This includes the Nationally Threatened Hooded Warbler (and its first confirmed breeding in the Niagara Peninsula), and the possible breeding of the Kentucky Warbler (which would be a first for Canada).

Old growth Tree Data: Age (years) Diameter

	<u>Range</u>	<u>Range</u>
Tulip Tree	150-225	24-36" No.
Red Oak	150-200	20-32"
Sugar Maple	170-230	20-34"
Hemlock	180-265	20-28"
Beech	150-225	18-26"
Bitternut Hickory	180+	20-24"
Pignut Hickory	180+	20-24"
White Ash	150-180	24-28"

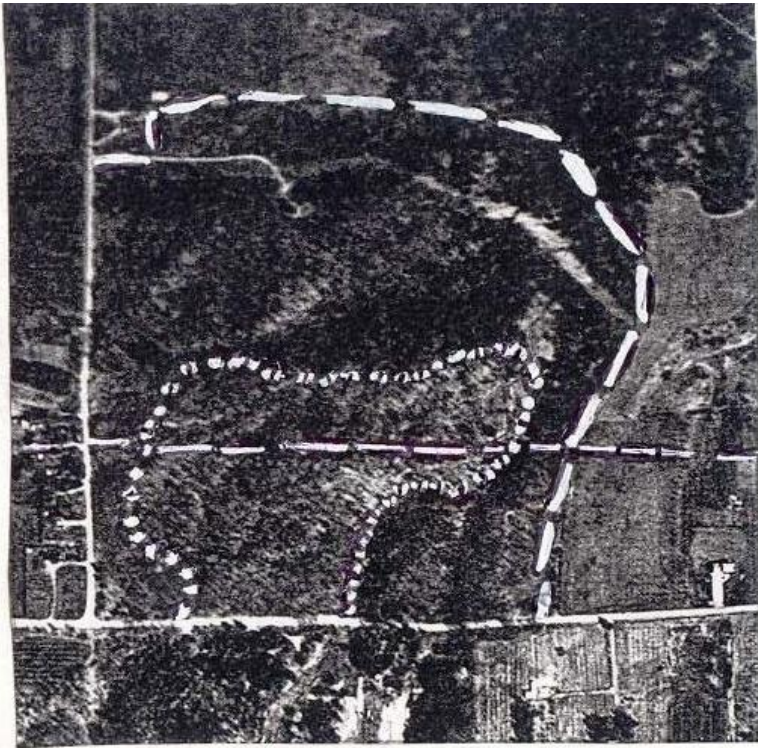




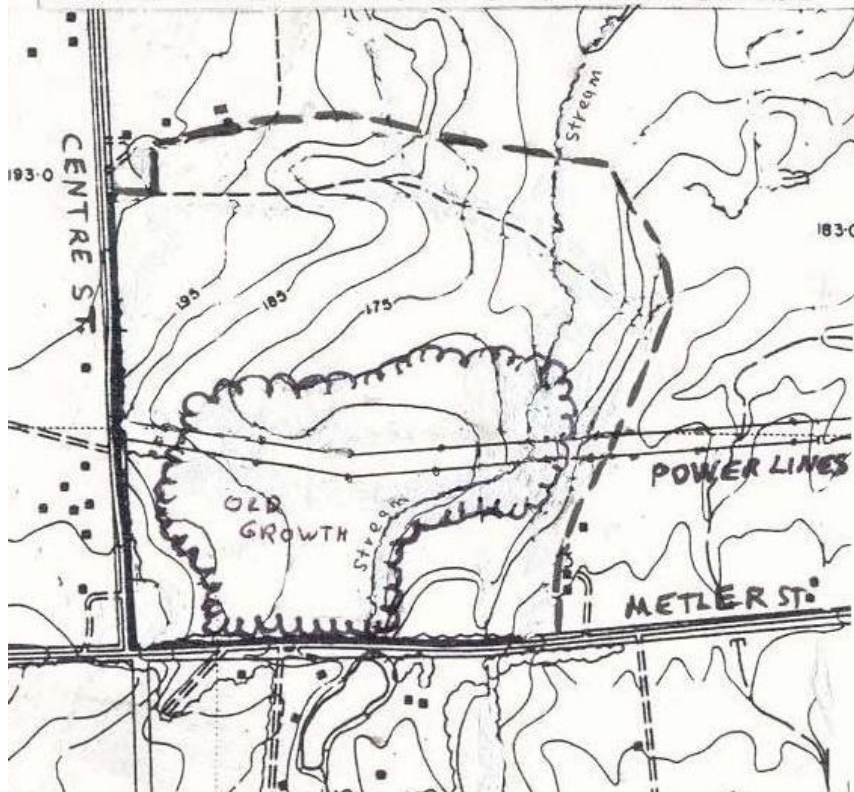
St. Johns Conservation Area



St. John Conservation Area Ravine



HAMILTON NATURALISTS CLUB SHORT HILLS PRESERVE OLD GROWTH FOREST



Hamilton Naturalists Club- Short Hills Wilderness Preserve

The Hamilton Naturalists Club reportedly purchased this 30-acre preserve because it harbors a great diversity of rare wildflowers and Carolinian trees, including the Nationally Threatened Cucumber Magnolia. This survey now fully confirms that the preserve has a 6-acre Old growth Forest to add to its natural attributes, with at least 6 species of trees between 150 to 275 years old. A major reason why the preserve has such a high biodiversity is because Old growth Forests typically harbour sensitive and rare species that do not survive disturbance, or have specialized habitats or life cycles.

The “*Ecological Survey of the Niagara Escarpment Biosphere Reserve*” (Steve Varga, et al,

1995, Ontario Ministry of Natural Resources) describes this preserve as having “the best representation in the Niagara Peninsula Section of moist Hemlock and Beech Kame valley slope forests, noteworthy for their maturity.” The mature forest the report refers to is really the Old growth Forest this report has confirmed.

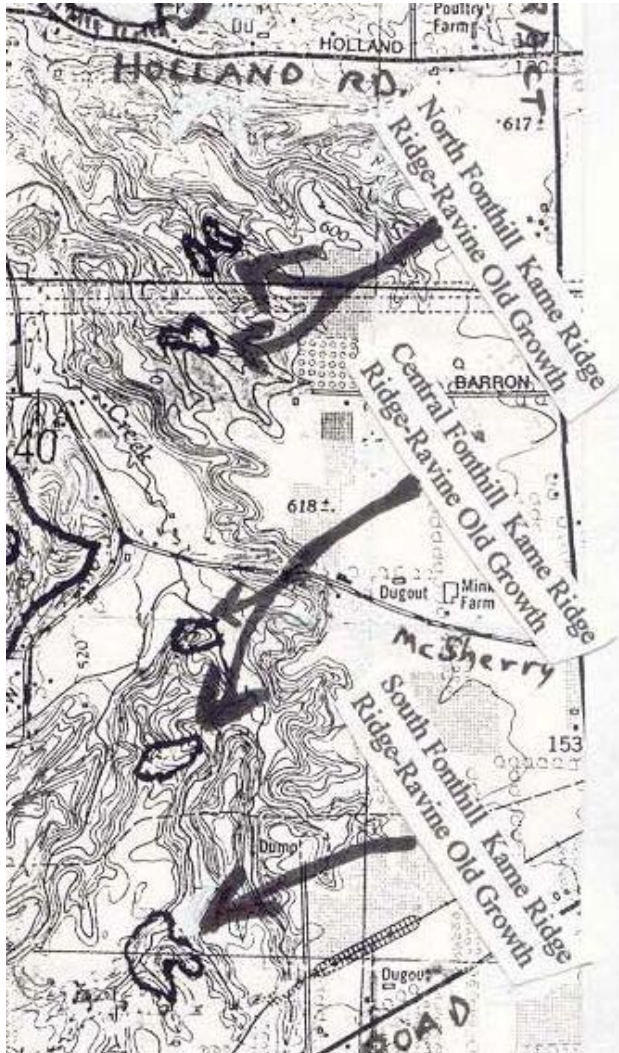
The ancient forest unfortunately is bisected by a power line. The report lists 11 Nationally and Provincially Rare, and 12 regionally rare plant species in the preserve. Examples that definitely grow in the ancient forest portion are Tulip Tree, Cucumber Magnolia, and Pignut Hickory. Examples of rare herbaceous plants that most likely grow in the Old growth portion of the preserve are White Wood Aster, Sessile Bellwort, Broad Beech Fern, One-flowered Cancer-root, and Twinflower.

<u>Old growth Tree Data:</u>	<u>Age (years)</u> <u>Range</u>	<u>Diameter</u> <u>Range</u>
Tulip Tree	150-275	30-42”
No. Red Oak	150-200	30-36”
Black Oak	150-200	30-36”
Sugar Maple	170-220	20-32”
Hemlock	180-250	20-27”
Beech	150-225	18-24”
Cucumber Magnolia	280	40”



Hamilton Naturalists Club- Short Hills Wilderness Preserve

North Fonthill Kame Ridge-Ravine Area



Lying just south of Short Hills Provincial Park, this deeply dissected landscape harbours scattered patches of Old growth Carolinian Forest totaling 6 acres

Like the other parts of this landscape, it is a challenging terrain to find old growth or to find your way. Ridges are very steep and winding, and ravines are hidden. Ideally, further support for a project to continue the Old growth Survey is the only way to ensure that all the remaining privately owned Old growth Forests in this area, or the Central and Southern Fonthill Kame Ridge-Ravine Areas, are found before they are lost to logging or development.

Although this private site does not suffer from the destructive ATV abuse that the Central and Southern Kame sites do, it does show the effects of selective cutting in the past that removed all the Black Walnuts and Black Cherries. Logging always remains a possibility for privately owned ancient forests, since there is no law, including Tree Ordinances, that protects Old Growth Forests or Heritage Trees. Only scenic easements or deed restrictions (if someone with an attorney is monitoring it over a long period of time) can accomplish this goal. Land purchase is the only guaranteed form of land protection.

Old growth Tree Data:	Age (years)	Diameter
	Range	Range
Beech	170-200	20-26"
White Oak	180-225	24-28"
No. Red Oak	160-200	25-38"
Basswood	180-200	20-36"
Tulip Tree	170-210	26-38"
Red Maple	150	24-30"

Central Fonthill Kame Ridge-Ravine Area

The central part of glacially-created Fonthill Kame Ridge-Ravine landscape contains two groves of Old growth Carolinian Forest, one on a sharp knoll, the other in a deep ravine. The most notable features are unusually large Pignut Hickory and Sassafras; Old growth White Pine, an uncommon occurrence on the Niagara Peninsula, and a colony of the Nationally Rare White Wood Aster. Very large Red Oak and Black Oak, also grow with ancient Sugar and Red Maple, Beech, White Ash, and Basswood.

The two sites are connected by a trail that runs along a narrow winding ridge that stands high above the surrounding mature forest. The tracks of unauthorized ATV use could be seen below at times. They illegally enter via a utility right-of-way corridor that should be fenced off.

The local person who guided me to the sites said that we had only explored a portion of the complex landscape, and that it was likely that a few more ancient groves remain undiscovered. Since the land is privately owned, the forest has no protection from development or logging.

<u>Old growth Tree Data:</u>	<u>Age (years)</u>	<u>Diameter</u>	<u>Found in Knoll</u>
	<u>Range</u>	<u>Range</u>	<u>or Ravine site?</u>
Sugar Maple	220	30	Knoll
Black Oak	200	41"	Knoll
White Oak	200-220	30	Knoll
Pignut	170-180	24-36"	Both
Beech	180-230	20-32"	Both
Red Oak	150	38"	Ravine
Tulip Tree	200	30"	Ravine
Red Maple	190	31"	Ravine
Basswood	175	20"	Ravine
White Ash	180	30	Ravine
White Pine	180	36"	Ravine
Sassafras	200	25.5"	Ravine; notably large & old for this species

Large Amer. Chestnut stumps overlook creek bend – near the Knoll site

Other plants: Nationally Rare White Wood Aster; Running Strawberry Bush, Wild Ginger



Central Fonthill Kame – Chestnut Stumps



Central Fonthill Kame - Sassafras

South Fonthill Kame Ridge-Ravine Area

In the south end of the Fonthill Sand Kame, a distinctive glacier-created landscape, towering, ancient Sugar Maples, White Ashes, Tulip Trees, and Beeches cover unexpectedly steep slopes, tall narrow ridges and deep vales. Its Old growth tree diversity (13 species) is exceptional.

Unfortunately, rampant, irresponsible ATV use has created trails crisscrossing this 8-acre Old growth Carolinian Forest, decimating wildflower colonies, and reducing the site's value. Limiting this kind of abuse on sites that are privately owned can be a very uncertain process. If control could be enforced, it would allow it to slowly recover. At some time in the future, if the land abuse ends (and it is not followed by logging or development), it will restore itself to the grand forest that it once was, and no one will know its past.

<u>Old growth Tree Data:</u>	<u>Age (years)</u>	<u>Diameter</u>
	<u>Range</u>	<u>Range</u>
Sugar Maple	200	30
Beech	200-220	30-45"
Red Oak	150-220	38-42"
Tulip Tree	150-170	28-42"
Basswood	175	20"
Bitternut	180	28"
Sassafras	200	25"
River Grape (a vine)	150	6"

Notably large & old for this species
Old growth Grape Vine !



Southern Fonthill Kame – Sugar Maple