Tree Inventory & Preservation Plan Report
20 Cairns Crescent
Huntsville, Ontario

prepared for

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prepared by

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KUNTZ FORESTRY CONSULTING INC. Project P3676

Introduction

Kuntz Forestry Consulting Inc. (KFCI) was retained by 1000120857 Ontario Inc. to complete a Forest Tree Inventory and Preservation Plan report as part of a development application for the property located at 20 Cairns Crescent in Hunstville, Ontario. The subject site is located on the south side of Cairns Crescent between Cairns Drive and Kitchen Road South within a mixed-use area.

The work plan for this tree preservation study included the following:

- Prepare an inventory of deciduous tree resources greater than 6cm diameter at breast height (DBH) and coniferous tree resources greater than 2m in height on and within 6m of the subject property, and trees of all sizes within the road right-of-way surrounding the property.
- Evaluate potential tree saving opportunities based on proposed development plans;
- Document the findings in a Tree Inventory and Preservation Plan report.

The results of the evaluation are provided below.

Policy Framework

The Town of Huntsville By-law #2002-18 (Municipal Tree By-law) defines a “Tree” as any live Deciduous or Coniferous tree that has a minimum height of 2.0 metres (6.5 feet) and a minimum diameter of 45 millimetres (1.7 inches) at a point of one metre above ground level. Written approval from the Manager of Parks or the Director of Physical Services or their agents must be attained prior to the injuring or destruction of any tree on Municipal Lands within the Town of Huntsville.

Methodology

Deciduous trees greater than 6cm DBH and coniferous trees greater than 2m in height within the woodland were 100% tallied as a group and identified as a single polygon. This polygon has been identified as P22. Trees were tallied by species, size class, and assessed as acceptable growing stock (AGS) or unacceptable growing stock (UGS). Trees classified as AGS are trees with no major defects in the bole and exhibit relatively good crown structure and vigour. Trees classified as UGS are trees with a major defect in the bole or exhibiting relatively poor crown structure or vigour.

Deciduous trees greater than 6cm DBH and coniferous trees greater than 2m in height occurring along the edges of P22 up to 6m beyond the property boundary were included in the individual tree inventory. The minimum tree protection zone (mTPZ) distances employed are consistent with tree protection standards applied by various municipalities throughout Southern Ontario. Minimum tree protection zones are based on trunk diameter and are provided below.

Trunk Diameter (DBH)	Required mTPZ Distances
< 10 cm	1.2 m
11 - 30cm	1.8 m
31 - 40 cm	2.4 m
41 - 50 cm	3.0 m
51 – 60 cm	3.6 m
61 - 70 cm	4.2 m
71 - 80 cm	4.8 m
81 - 90 cm	5.4 m
91-100cm	6.0 m
101-110cm	6.6 m
111-120cm	7.2 m
121-130cm	7.8 m
131-140cm	8.4 m

Trees included in the individual tree inventory were located using a topographic survey of the subject site (provided by the client) and KFCI's Trimble Catalyst DA2 GNSS GPS survey unit, accurate to ±30cm. Trees occurring on the subject site and municipal right-of-way were tagged with the numbers 501-600 and 1201-1223, while trees occurring on neighbouring lands were not tagged and are identified with the numbers 1-85. Twenty-one (21) additional groups of trees were grouped into polygons and are identified as P1-P21.

Refer to Figure 1 for tree locations, Table 1 for the results of the individual tree inventory, and Table 2 for the results of the 100% tally of the clearing envelope.

Tree resources were visually assessed for condition utilizing the following parameters:

Tree # – Number or letter assigned to trees that corresponds to Figure 1.
Species – Common and botanical names provided in the inventory table.
DBH – Diameter (centimeters) at breast height, measured at 1.37 m above the ground.
Height – Height of tree (metres).
Condition – Condition of tree considering trunk integrity (TI), crown structure (CS) and crown vigor (CV). Condition ratings include poor (P), fair (F), and good (G).
Crown Dieback – Percentage of dead branches in the crown.
Crown Width – Crown diameter (metres).
Comments – Any other relevant tree condition information. Defects are rated light (L), moderate (M), or heavy (H).

Existing Site Conditions

The subject site is currently comprised of a vacant lot with a woodland covering the majority of the property. Refer to Figure 1 for existing site conditions.

Individual Tree Resources

Site visits were conducted on 20 and 21 March 2023. The 100% tally documented 1,609 trees within P22. This polygon covers approximately 14,276m$^{2.}$ The individual tree inventory documented 206 trees and 21 polygons growing outside of P22 that could potentially be impacted by the proposed development.

Refer to Table 1 for full results of the individual tree inventory, Table 2 for full results of the 100% tally, and Figure 1 for the location of trees recorded in this study. See Appendix A for photos of trees.

Tree resources were comprised of White Ash (*Fraxinus americana*), White Spruce (*Picea glauca*), Pear (*Pyrus spp.*), Yellow Birch (*Betula alleghaniensis*), Sugar Maple (*Acer saccharum*), Eastern Hemlock (*Tsuga canadensis*), Basswood (*Tilia americana*), Balsam Fir (*Abies balsamea*), Eastern Cottonwood (*Populus deltoides*), Ironwood (*Ostrya virginiana*), Scots Pine (*Pinus sylvestris*), White Birch (*Betula papyrifera*), White Pine (*Pinus strobus*), Pussy Willow (*Salix spp.*), Black Cherry (*Prunus serotina*), Striped Maple (*Acer pensylvanicum*), Red Oak (*Quercus rubra*), American Beech (*Fagus grandifolia*), and Gray Alder (*Alnus incana*).

Proposed Development

The proposed development involves the construction of a 4-storey residential building with above ground parking, sidewalks, and driveways providing access to Cairns Crescent. Refer to Figure 1 for the proposed site plan.

Discussion

The following sections provide a discussion and analysis of tree impacts and tree preservation relative to the proposed development and existing conditions.

Development Impacts/Tree Removal

A 13,054 m^2 section of P22 containing approximately 1,471 trees, and 103 trees along the edges of P22 greater than 6cm DBH or 2m in height will need to be removed to accommodate the proposed development. An additional 14 polygons containing approximately 258 trees of all sizes will need to be removed. Tree removals must be completed outside of migratory bird season due to the Canadian Migratory Birds Convention Act,1994 (MBCA). If tree removals are to occur during the breeding bird season (April 1-August 31), a qualified biologist must conduct a nesting sweep within 72 hours of tree removals to confirm that no protected birds are breeding within trees identified for removal.

The removal of Tree 1217 is recommended regardless of the site plan due to it's condition.

Trees 6, and 1209 are located within the municipal right-of-way. Written approval from the Manager of Parks or the Director of Physical Services or their agents must be attained prior to the removal of these trees.

Trees 1-3, 59, 60, 64-70, 74, 77, 79-81, and 83-85 are located on adjacent property. Permission must be attained from the property owners prior to the removal of these trees.

Tree Preservation

The preservation of a 1,197m^2 section of P22 containing approximately 135 trees, as well as 102 individual trees and seven (7) polygons outside P22 may be possible with the use of the appropriate tree protection measures. Tree protection/erosion and sediment control fencing should be constructed from metal T-bars on 2-3m centres and geotextile, to be installed according to Figure 1. This tree protection fence must remain in place throughout the construction phase.

It is recommended that the proposed erosion and sediment control fencing be constructed to exclude amphibians from the construction area to avoid accidental impacts. The ESC fencing should be a minimum of 1 m in height and the bottom of the fence should be buried 10-20cm into the ground. The fencing should be maintained throughout the construction period. (Ministry of Natural Resources, 2013). Refer to Figure 1 for the location of required tree preservation fencing, general Tree Protection Plan Notes, and tree preservation fence details.

Where the minimum tree protection zone (mTPZ) of a tree cannot be fully respected, special mitigation measures have been prescribed and are outlined below.

Trees 53, 61, 71-73, 75, 76, and 82

Encroachment into the mTPZs of Trees 53, 61, 71-73, 75, 76, and 82 is required to accommodate grading work. The following mitigation measures must be employed to ensure the trees respond well to construction:

1. Prior to the commencement of the proposed work, tree preservation fencing should be installed as show on Figure 1.
2. Air-spading technology or a low-pressure hydro-vacuum unit should be used to excavate trenches at the locations shown on Figure 1 with solid cyan.
3. The depth of the trenches should be a minimum of 90cm.
4. Any roots found inside the trenches are to be pruned by a Certified Arborist in accordance with Good Arboricultural Standards.
5. The trenches are to be backfilled with clean topsoil.
6. All works should be supervised by a Certified Arborist in accordance with Good Arboricultural Standards.

Summary and Recommendations

Kuntz Forestry Consulting Inc. was retained by 1000120857 Ontario Inc. to complete a Tree Inventory and Preservation Plan report as part of a development application for the property located at 20 Cairns Crescent in the Town of Huntsville, Ontario. A tree inventory was conducted and reviewed in the context of the proposed site plan.

The study documented 1,609 trees within P22, as well as 206 individual trees and 21 polygons growing outside of P22 that could potentially be impacted by the proposed. The removal of approximately 1,471 trees within P22, and 103 trees and 14 polygons outside of P22 will be required to accommodate the proposed development. The remaining trees and polygons can be saved with the use of appropriate tree protection measures, as specified on Figure 1.

The following recommendations are suggested to minimize impacts to trees identified for preservation. Refer to Figure 1 for tree preservation fencing locations, general Tree Protection Plan Notes, and tree preservation fence details.

- Tree protection barriers and fencing should be erected at locations as prescribed on Figure 1. All tree protection measures should follow the guidelines as set out in the tree preservation plan notes and the tree preservation fencing detail.

- No construction activity including surface treatments, excavations of any kind, storage of materials or vehicles, unless specifically outlined above, is permitted within the area identified on Figure 1 as a tree protection zone (TPZ) at any time during or after construction.

- Special mitigation measures have been prescribed for select trees, as outlined in the *Tree Preservation* section of this report.

- Branches and roots that extend beyond prescribed tree protection zones that require pruning must be pruned by a qualified Arborist or other tree professional. All pruning of tree roots and branches must be in accordance with Good Arboricultural Standards.

- Site visits, pre, during, and post construction are recommended by either a certified consulting arborist (I.S.A.) or registered professional forester (R.P.F.) to ensure proper utilization of tree protection barriers. Trees should also be inspected for damage incurred during construction to ensure appropriate pruning or other measures are implemented.

Respectfully Submitted,

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Limitations of Assessment

Only the tree(s) identified in this report were included in the inventory. The assessment of the trees presented in this report has been made using accepted arboricultural techniques. These may include a visual examination taken from the ground of all the above-ground parts of the tree for structural defects, scars, external indications of decay such as fungal fruiting bodies, evidence of attack by insects, discoloured foliage, the condition of any visible root structures, the degree of lean (if any), the general condition of the trees and the identification of potentially hazardous trees or recommendations for removal (if applicable). Where trees could not be directly accessed (ie. due to obstructions, and/or on neighbouring properties), trees were assessed as accurately as possible from nearby vantage points.

Locations of trees provided in the report are determined as accurately as possible based on the best information available. If official survey information is not provided, tree location in the report may not be exact. Where KFCI's in-house GPS unit is used (if applicable), tree locations are accurate only to the extent that the technology allows, which can be variable based on satellite available, RTK network / cell coverage, canopy coverage, and/or projection transformation limitations. In this case, if trees occur on or near property boundaries, an official site survey may be required to determine ownership utilizing specialized survey protocol to gain precise location.

Furthermore, recommendations made in this report are based on the site plans that have been provided at the time of reporting. These recommendations may no longer be applicable should changes be made to the site plan and/or grading, servicing, or landscaping plans following report submission.

Notwithstanding the recommendations and conclusions made in this report, it must be recognized that trees are living organisms, and their health and vigor constantly change over time. They are not immune to changes in site conditions or seasonal variations in the weather conditions. Any tree will fail if the forces applied to the tree exceed the strength of the tree or its parts.

Although every effort has been made to ensure that this assessment is reasonably accurate, the trees should be re-assessed periodically. The assessment presented in this report is valid at the time of inspection.

Table 1. Individual Tree Inventory

Location: 20 Cairns Cres Date: 20, 21 March 2023 Surveyors: IB

Tree#	Common Name	Scientific Name	DBH	Height (m)	TI	CS	CV	CDB	CW	Comments	Action
1	White Ash	*Fraxinus americana*	~22,15,10	5	F	F-G	F-G		6	Codominant at 0.5m	Remove
2	White Spruce	*Picea glauca*	~63	8	G	G	G		6		Remove
3	White Spruce	*Picea glauca*	~58	8	F-G	G	G		7	Exposed roots (M)	Remove
4	Silver Maple	*Acer saccharinum*	~41,37	8	F-G	F	F-G		8	Codominant atb1.2m, dead branches (M)	Retain
5	Pear	*Pyrus spp.*	~17, 20, 20, 18	3	P-F	P-F	F		7	Poor form (H)	Retain
6	Yellow Birch	*Betula alleghaniensis*	19, 11, 9	5	F	F	F-G		6	Union at 1m, lean (L), asymmetrical crown (L)	Remove
7	Sugar Maple	*Acer saccharum*	19, 13	5	F	F	F-G		14	Lean (M), codominant at base	Retain
8	Eastern hemlock	*Tsuga canadensis*	~74	8	F-G	F	G		12	Exposed roots (M), dead branches (L)	Retain
9	Sugar Maple	*Acer saccharum*	24,24	5	F	F	F-G		14	Codominant at 1m, asymmetrical crown (M)	Retain
10	Sugar Maple	*Acer saccharum*	~35	7	G	F	G		12	Spiral seam, poor form (L)	Retain
11	Sugar Maple	*Acer saccharum*	~30	7	G	F	F-G		12	Poor form (M)	Retain
12	Sugar Maple	*Acer saccharum*	~29	7	F	F-G	F-G		10	Bowed (M), exposed roots (m)	Retain
13	Sugar Maple	*Acer saccharum*	~36	7	G	P-F	F-G		12	V union at 4m, poor form (M)	Retain
14	Sugar Maple	*Acer saccharum*	13, 11	3	G	G	G		4		Retain
15	Sugar Maple	*Acer saccharum*	11	3	G	G	G		5		Retain
16	Balsam Fir	*Abies balsamea*	7	3	G	G	G		2		Retain
17	Sugar Maple	*Acer saccharum*	13	4	G	G	G		6		Retain
18	Basswood	*Tilia americana*	~35, 35, 33, 25, 30	8	F	P-F	F		18	Codominant at base, leaning (M), poor form (M)	Retain
19	Balsam Fir	*Abies balsamea*	6	2	G	G	G		2		Retain
20	Sugar Maple	*Acer saccharum*	10	3	G	G	G		4		Retain
21	Sugar Maple	*Acer saccharum*	27	6	F	G	G		10	Lean (M)	Retain
22	Sugar Maple	*Acer saccharum*	12	4	G	G	G		4		Retain
23	Sugar Maple	*Acer saccharum*	15	4	F	G	G		6	Lean (M)	Retain
24	Sugar Maple	*Acer saccharum*	17	4	G	F	F		4	Broken branches (M), poor form (M)	Retain
25	Sugar Maple	*Acer saccharum*	16	4	G	G	G		4		Retain
26	Sugar Maple	*Acer saccharum*	11, 6	4	G	F-G	F-G		4		Retain
27	Sugar Maple	*Acer saccharum*	17	4	G	F-G	G		4		Retain
28	Sugar Maple	*Acer saccharum*	16	4	G	G	G		4		Retain
29	Sugar Maple	*Acer saccharum*	16	4	G	G	G		4		Retain
30	Sugar Maple	*Acer saccharum*	12	4	G	G	G		3		Retain
32	White Ash	*Fraxinus americana*	26	6	G	G	F	20	10		Retain
33	Balsam Fir	*Abies balsamea*	8	3	G	F	G		3	Topped	Retain
34	Sugar Maple	*Acer saccharum*	~30	8	G	G	G		10		Retain
35	Eastern Cottonwood	*Populus deltoides*	~50	12	G	G	G		14		Retain

36	White Ash	*Fraxinus americana*	23	8	G	F	F-G		8	Bowed (M)	Retain
37	Yellow birch	*Betula alleghaniensis*	31	7	G	G	G		14		Retain
38	Sugar Maple	*Acer saccharum*	17	4	G	P-F	P-F		8	Top dead	Retain
39	Basswood	*Tilia americana*	30	8	G	F	F		12	Poor form (M), burls (M)	Retain
40	Ironwood	*Ostrya virginiana*	7	3	G	G	G		6		Retain
41	White Ash	*Fraxinus americana*	20	6	F-G	F	F		8	Lean (M)	Retain
42	Balsam Fir	*Abies balsamea*	18	5	G	G	G		3		Retain
43	Sugar Maple	*Acer saccharum*	22	7	G	P	F		7	Poor form (H)	Retain
44	Balsam Fir	*Abies balsamea*	10	3	G	G	G		4		Retain
45	Balsam Fir	*Abies balsamea*	7	3	G	G	G		2		Retain
46	Sugar Maple	*Acer saccharum*	30	7	G	G	G		12		Retain
47	Sugar Maple	*Acer saccharum*	15	3	G	F-G	G		10	Bowed (L)	Retain
48	Sugar Maple	*Acer saccharum*	30	8	G	G	G		12		Retain
49	Sugar Maple	*Acer saccharum*	17	4	G	G	G		10		Retain
50	Silver Maple	*Acer saccharinum*	38	9	G	F	G		14	Bowed (M)	Retain
51	Sugar Maple	*Acer saccharum*	8	3	G	G	G		2		Retain
52	Ironwood	*Ostrya virginiana*	14,14	4	G	G	G		7		Retain
53	Balsam Fir	*Abies balsamea*	6	3	G	G	F		2	Poor vigor (M)	Retain (injure)
54	Balsam Fir	*Abies balsamea*	6	3	G	G	F		2	Poor vigor (M)	Retain
55	Sugar Maple	*Acer saccharum*	24	6	G	G	G		8		Retain
56	Ironwood	*Ostrya virginiana*	24	5	G	F	F-G		6	Union at 3m	Retain
57	Balsam Fir	*Abies balsamea*	11	3	G	G	F		2	Poor vigor (M)	Retain
58	Balsam Fir	*Abies balsamea*	10	3	G	G	G		2		Retain
59	Sugar Maple	*Acer saccharum*	33	7	G	G	G		12		Remove
60	Balsam Fir	*Abies balsamea*	15	4	G	G	G		2		Remove
61	Sugar Maple	*Acer saccharum*	18	5	G	F	F-G		8	Asymmetrical crown (M)	Retain (injure)
62	Balsam Fir	*Abies balsamea*	12	4	G	G	G		2		Retain
63	Basswood	*Tilia americana*	35,32	8	P-F	P-F	P-F		18	Codominant at base, lost leader,	Retain
64	Balsam Fir	*Abies balsamea*	12	3	G	G	G		2		Remove
65	Scots pine	*Pinus sylvestris*	15	5	G	G	G		4		Remove
66	White Birch	*Betula papyrifera*	30	6	G	G	G		10		Remove
67	White Birch	*Betula papyrifera*	33	7	G	G	G		12		Remove
68	Eastern Cottonwood	*Populus deltoides*	23	7	G	G	G		10		Remove
69	Eastern Cottonwood	*Populus deltoides*	8	4	G	G	G		3		Remove
70	White Ash	*Fraxinus americana*	29	7	G	F-G	F	30	12	Union at 5m	Remove
71	Eastern Cottonwood	*Populus deltoides*	17	6	G	F	F-G		10	Asymmetrical crown (M)	Retain (injure)
72	Balsam Fir	*Abies balsamea*	17	4	G	G	P-F		6	Poor vigor (H)	Retain (injure)
73	Balsam Fir	*Abies balsamea*	8	3	G	G	G		2		Retain (injure)
74	Balsam Fir	*Abies balsamea*	15, 15	4	F-G	F-G	F		5	Codominant at 0.5m, poor vigor (M)	Remove

75	Eastern Cottonwood	*Populus deltoides*	14	4	G	F	F		6	Poor form (M)	Retain (injure)
76	Sugar Maple	*Acer saccharum*	12	4	G	G	G		4		Retain (injure)
77	Balsam Fir	*Abies balsamea*	14	4	G	F-G	P-F		4	Poor vigor (H)	Remove
78	Ironwood	*Ostrya virginiana*	10	3	G	G	G		4		Retain
79	Basswood	*Tilia americana*	37, 28, 33	7	F	F	F		12	Codominant at base	Remove
80	Balsam Fir	*Abies balsamea*	13	3	G	F	F		4	Asymmetrical crown (M), poor vigor (M)	Remove
81	Ironwood	*Ostrya virginiana*	8	3	G	G	G		2		Remove
82	Balsam Fir	*Abies balsamea*	21	4	G	G	P-F	50	4		Retain (injure)
83	White Ash	*Fraxinus americana*	11	4	G	F	F	40	4		Remove
84	White Ash	*Fraxinus americana*	6	3	G	P-F	P-F	50	2	Poor form (H)	Remove
85	Black Cherry	*Prunus serotina*	17	4	G	G	G		8		Remove
501	Sugar Maple	*Acer saccharum*	44	10	G	F	G		14	Poor form (M)	Remove
502	Sugar Maple	*Acer saccharum*	12	3	G	G	G		6		Remove
503	Sugar Maple	*Acer saccharum*	11	3	F-G	F	F		6	Canker (M)	Remove
504	Sugar Maple	*Acer saccharum*	16	3	G	G	G		4		Remove
505	Sugar Maple	*Acer saccharum*	12	3	G	F-G	G		4	Asymmetrical crown (L)	Remove
506	Black Cherry	*Prunus serotina*	12	3	G	G	G		6		Remove
507	Yellow birch	*Betula alleghaniensis*	40	6	F	F	F-G		12	Bowed (M), poor form (M)	Remove
508	Sugar Maple	*Acer saccharum*	19	6	G	G	G		10		Remove
509	Eastern Hemlock	*Tsuga canadensis*	9	3	G	G	F-G		2	Poor vigor (L)	Remove
510	Eastern Hemlock	*Tsuga canadensis*	9	3	G	G	G		2		Remove
511	Yellow birch	*Betula alleghaniensis*	21	6	F	G	G		10	Exposed roots (H)	Remove
512	Eastern Hemlock	*Tsuga canadensis*	10	3	F-G	G	G		2	Bowed at base	Remove
513	Eastern Hemlock	*Tsuga canadensis*	11	3	G	G	G		2		Remove
514	Yellow birch	*Betula alleghaniensis*	23	6	G	F-G	G		8	Asymmetrical crown (L)	Remove
515	Yellow birch	*Betula alleghaniensis*	13	4	G	G	G		6		Remove
516	Eastern Hemlock	*Tsuga canadensis*	8	2	G	G	G		2		Remove
517	Eastern Hemlock	*Tsuga canadensis*	18	3	G	F	G		8	Asymmetrical crown (M), lean (L)	Remove
518	Ironwood	*Ostrya virginiana*	10	3	G	F	P	50	3	Fruiting bodies (M)	Remove
519	White Ash	*Fraxinus americana*	8	3	G	F	F	20	3	Poor form (M)	Remove
521	Eastern Hemlock	*Tsuga canadensis*	13	3	G	G	G		2		Remove
522	Eastern Hemlock	*Tsuga canadensis*	17	3	G	G	G		4		Remove
523	Eastern Hemlock	*Tsuga canadensis*	10	3	G	G	G		2		Remove
524	Sugar Maple	*Acer saccharum*	54	11	G	F-G	G		14	Codominant at 2m	Remove
525	Eastern Hemlock	*Tsuga canadensis*	16	4	G	G	G		3		Remove
526	Eastern Hemlock	*Tsuga canadensis*	7	3	G	G	G		2		Remove
527	Eastern Cottonwood	*Populus deltoides*	17	7	G	F-G	G		8	Asymmetrical crown (L)	Remove
528	Sugar Maple	*Acer saccharum*	39, 47	11	F-G	F	P-F		20	Fruiting bodies (M), codominant at 1m, dead branches(M)	Remove
529	Basswood	*Tilia americana*	34	8	G	F	F-G		12	Asymmetrical crown (M) poor form (M)	Remove
530	Sugar Maple	*Acer saccharum*	13	3	G	G	F	30	3		Remove
531	Eastern Cottonwood	*Populus deltoides*	35	10	G	G	G		12		Remove

532	Eastern Cottonwood	*Populus deltoides*	17	7	G	F-G	G		8	Poor form (L)	Remove
533	Basswood	*Tilia americana*	28,55,16	10	F	F-G	F-G		14	Codominant at base	Remove
534	Yellow birch	*Betula alleghaniensis*	52	9	F-G	P	P-F		19	Dead leader, codominant at 1.5m, asymmetrical crown (H)	Remove
535	Eastern Hemlock	*Tsuga canadensis*	15	3	G	G	G		3		Remove
536	Sugar Maple	*Acer saccharum*	31	8	G	F-G	G		16	Asymmetrical crown (M)	Remove
537	Eastern Cottonwood	*Populus deltoides*	24	10	G	G	G		10		Remove
539	Eastern Hemlock	*Tsuga canadensis*	19	5	G	G	G		4		Remove
540	White Birch	*Betula papyrifera*	13	3	F-G	G	G		6	Lost leader, lean (L)	Remove
541	White Ash	*Fraxinus americana*	19	7	G	G	F	30	8		Remove
542	Ironwood	*Ostrya virginiana*	8	3	G	G	G		6		Remove
543	Eastern Hemlock	*Tsuga canadensis*	16	5	G	G	F		4	Poor vigor (M)	Remove
544	White Birch	*Betula papyrifera*	11	4	F-G	G	F-G		4		Remove
545	White Birch	*Betula papyrifera*	12	4	G	G	G		4		Remove
546	Eastern Hemlock	*Tsuga canadensis*	13	4	G	G	G		4		Remove
547	Sugar Maple	*Acer saccharum*	18	6	G	F	G		8	Asymmetrical crown (M)	Remove
548	Sugar Maple	*Acer saccharum*	25	8	G	G	G		14		Remove
549	Eastern Hemlock	*Tsuga canadensis*	11	3	G	G	G		4		Remove
550	Ironwood	*Ostrya virginiana*	8	3	G	G	G		4		Remove
551	Eastern Hemlock	*Tsuga canadensis*	8	3	G	G	P		2		Remove
552	Eastern Hemlock	*Tsuga canadensis*	17	4	G	G	G		4		Remove
553	Service berry	*Amelanchier arborea*	9	3	F	G	G		6	Lean (M)	Remove
554	Eastern Cottonwood	*Populus deltoides*	9	5	G	G	G		6		Remove
555	Sugar Maple	*Acer saccharum*	25,24,22	7	F-G	F	F		18	Codominant at 0.5m, dead branches (M)	Remove
556	White Ash	*Fraxinus americana*	10	4	G	F	F	30	5	Asymmetrical crown (M)	Remove
557	White Ash	*Fraxinus americana*	10	4	G	F	G		4		Remove
558	White Ash	*Fraxinus americana*	23	7	G	F-G	F-G		12	Asymmetrical crown (L)	Remove
559	White Pine	*Pinus strobus*	34, 17	6	F-G	F-G	G		8	Union at 0.5m, asymmetrical crown (L)	Remove
560	White Spruce	*Picea glauca*	30	6	F-G	G	G		6	Lean (L)	Remove
561	White Pine	*Pinus strobus*	51	6	G	F-G	G		9	Codominant at 1.5m	Remove
562	Pussy willow	*Salix spp.*	8,7,5,4	2	F	F	F	20	4	Codominant at base, dead leader	Remove
563	Scots Pine	*Pinus sylvestris*	22	5	G	F	VP	90	6	V union at 1.5m, poor form (M)	Remove
564	Eastern Cottonwood	*Populus deltoides*	20	7	G	F-G	F	15	8	Dead branches (L), lean (L)	Remove
565	Basswood	*Tilia americana*	20	7	G	F-G	F		6	Poor vigor (L), Union at 2.3m	Remove
566	Basswood	*Tilia americana*	18	6	G	F	G		4	Poor form (M)	Remove
567	Black Cherry	*Prunus serotina*	13	5	F	G	G		4	Bowed at base	Retain
568	Eastern Hemlock	*Tsuga canadensis*	25	7	G	F	VP	90	3	Almost dead	Retain
569	Eastern White Cedar	*Thuja occidentalis*	44	4	G	G	G		6		Retain
570	Eastern Hemlock	*Tsuga canadensis*	12, 10	3	F	F	F		4	Codominant at base, poor form	Retain
571	Striped Maple	*Acer pensylvanicum*	7	3	G	P	G		6	Lost leader, poor form (H)	Retain
572	Sugar Maple	*Acer saccharum*	13	3	G	F	G		6	Asymmetrical crown (M)	Retain
573	Sugar Maple	*Acer saccharum*	17	4	G	G	G		8		Retain
574	Sugar Maple	*Acer saccharum*	7	3	G	G	G		6		Retain
575	Sugar Maple	*Acer saccharum*	8	3	G	F	G		4	Bowed((m), asymmetrical crown (M)	Retain

576	Ironwood	*Ostrya virginiana*	19	4	G	G	G		6		Retain
577	Balsam Fir	*Abies balsamea*	7	3	G	G	F		2	Thin crown	Retain
578	Balsam Fir	*Abies balsamea*	7	3	G	G	G		2		Retain
579	Yellow birch	*Betula alleghaniensis*	21	5	G	F-G	G		12		Retain
580	White Ash	*Fraxinus americana*	15	4	G	G	F-G		8		Retain
581	Sugar Maple	*Acer saccharum*	10	3	G	F	F-G		4	Crook(L), poor form (M,)	Retain
582	Sugar Maple	*Acer saccharum*	7	3	G	F	F-G		3	Asymmetrical crown (M)	Retain
583	Balsam Fir	*Abies balsamea*	11	3	G	G	G		4		Retain
584	Sugar Maple	*Acer saccharum*	26	7	G	G	G		10		Retain
585	Sugar Maple	*Acer saccharum*	30	7	G	G	G		14		Retain
586	Sugar Maple	*Acer saccharum*	20	6	G	F-G	G		8	Crook (L)	Retain
587	Sugar Maple	*Acer saccharum*	22	6	G	G	G		5		Retain
588	Sugar Maple	*Acer saccharum*	8	3	G	G	G		4		Retain
589	Sugar Maple	*Acer saccharum*	15	4	G	F	P	40	4		Retain
590	Sugar Maple	*Acer saccharum*	24	6	F	F	F-G		5	Bowed (M), asymmetrical crown (L)	Retain
591	Sugar Maple	*Acer saccharum*	37, 14	8	F-G	F-G	G		12	Union atv1.2m,	Retain
592	Sugar Maple	*Acer saccharum*	22	7	F	G	G		10	Bowed at base (M)	Retain
593	Sugar Maple	*Acer saccharum*	27	7	G	G	G		12		Retain
594	Sugar Maple	*Acer saccharum*	13	4	F-G	P-F	P-F		4	Poor form (M)	Retain
595	Sugar Maple	*Acer saccharum*	22	6	G	F	G		10	Union at 2.5m	Retain
596	Sugar Maple	*Acer saccharum*	17	5	P-F	F-G	F		8	Lean (M)	Retain
597	Sugar Maple	*Acer saccharum*	25	7	G	G	G		12		Retain
598	Sugar Maple	*Acer saccharum*	44	9	G	P-F	F-G		16	Asymmetrical crown (M), lost leader (L)	Retain
599	Sugar Maple	*Acer saccharum*	32	8	F	F	F		8	Cavity (M), poor form (M)	Retain
600	Sugar Maple	*Acer saccharum*	30	8	F	F	F		10	Canker (H)	Retain
1201	Balsam Fir	*Abies balsamea*	28	8	G	F	G		6	Asymmetrical crown (M)	Remove
1202	Black Walnut	*Juglans nigra*	25	7	F-G	F-G	F-G		7	Bowed (L), Union at 3m	Remove
1203	Eastern Hemlock	*Tsuga canadensis*	38	8	F-G	G	G		7		Remove
1204	Red Oak	*Quercus rubra*	6	4	G	F	G		4	Asymmetrical crown (M)	Remove
1204	White Ash	*Fraxinus americana*	9	4	G	F	F	20	4	Asymmetrical crown (M)	Remove
1205	Black Cherry	*Prunus serotina*	7	4	F-G	F	F		4	Poor form (M), fruiting bodies (L)	Remove
1206	White Ash	*Fraxinus americana*	20, 14	6	F	F	F	20	6	Codominant at base, crown die back (M)	Remove
1207	Red Oak	*Quercus rubra*	7	3						Almost dead	Remove
1208	Sugar Maple	*Acer saccharum*	16	4	G	G	G		5		Remove
1209	Sugar Maple	*Acer saccharum*	3	4	G	G	G		1		Remove
1210	Sugar Maple	*Acer saccharum*	15	4	G	F	G		5	Asymmetrical crown (M)	Remove
1211	White Spruce	*Picea glauca*	20	7	G	G	P-F	20	5	Poor vigor (M)	Remove
1212	Sugar Maple	*Acer saccharum*	18	5	G	G	G		5		Remove
1213	Eastern Hemlock	*Tsuga canadensis*	31	7	G	F-G	G		9	Asymmetrical crown (L)	Remove
1214	Eastern hemlock	*Tsuga canadensis*	38	8	G	G	G		6		Remove
1215	American Beech	*Fagus grandifolia*	50	10	G	G	G		14		Remove
1216	Sugar Maple	*Acer saccharum*	41	10	G	F-G	F-G		10	Union at 4.5m, poor form (L)	Remove

1217	Sugar Maple	*Acer saccharum*	77	11	F	P	P	50	16	Codominant at 2.5m, fruiting bodies (H), dead leader (H)	Remove (condition)
1218	Sugar Maple	*Acer saccharum*	28	7	F-G	F-G	F-G		12	Lean (L)	Retain
1219	Sugar Maple	*Acer saccharum*	53	12	G	F-G	G		18	Codominant at 1.6m	Retain
1220	Sugar Maple	*Acer saccharum*	15	4	G	G	G		6		Retain
1221	Balsam Fir	*Abies balsamea*	7	3	G	G	G		4		Retain
1222	Sugar Maple	*Acer saccharum*	31	7	G	F	G		9	Union at 5m	Retain
1223	Sugar Maple	*Acer saccharum*	19	5	G	G	G		10		Remove
P1	Scots Pine	*Pinus sylvestris*	6-24	5						24 trees, average DBH 15cm	Remove
P2	Gray Alder	*Alnus incana*	3-6	3						~50 trees, average 5cm	Remove
P3	Eastern White Cedar	*Thuja occidentalis*	15-26	5						3 trees, average DBH 19cm	Remove
P4	White Ash, Sugar Maple, Basswood	*Fraxinus americana, Acer saccharum, Tilia americana*	5-15	4						29 trees, average DBH 10cm	Remove
P5	Sugar Maple, Balsam Fir	*Acer saccharum, Abies balsamea*	6-18	5						4 trees, average DBH 12cm	Retain
P6	Sugar Maple, Balsam Fir, Ironwood	*Acer saccharum, Abies balsamea, Ostrya virginiana*	6-35	6						22 trees, average DBH 15cm	Retain
P7	Balsam Fir, Yellow Birch	*Abies balsamea, Betula alleghaniensis*	7-11	4						4 trees	Retain
P8	Balsam Fir	*Abies balsamea*	6-15	4						6 trees, average 8cm	Retain
P9	Sugar Maple	*Acer saccharum*	6-13	5						5 trees	Retain
P10	Balsam Fir	*Abies balsamea*	3-6	3						8 trees, average 4cm	Retain
P11	Balsam Fir	*Abies balsamea*	6-10	3						6 trees	Remove
P12	Balsam Fir, Ironwood, Sugar Maple	*Acer saccharum, Abies balsamea, Ostrya virginiana*	3-8	4						16 trees average 6cm	Remove
P13	Balsam Fir, Ironwood	*Abies balsamea, Ostrya virginiana*	6-25	5						17 trees, average DBH 10cm.	Remove
P14	Balsam Fir	*Abies balsamea*	3-8	3						16 trees, average 5cm	Remove
P15	Balsam Fir, Ironwood	*Abies balsamea, Ostrya virginiana*	3-14	3						26 trees, average DBH 6cm	Remove
P16	Balsam Fir, Eastern Cottonwood, Yellow Birch	*Abies balsamea, Betula alleghaniensis, Populus deltoides*	3-25	5						22 trees, average DBH 13cm	Remove
P17	White Birch, Balsam Fir, Scots Pine	*Betula papyrifera, Abies balsamea, Pinus sylvestris*	45015	6						23 trees, average 14cm	Remove
P18	Eastern Cottonwood, White Ash, Black Cherry	*Prunus serotina, Populus deltoides, Fraxinus americana*	3-8	4						11 trees average 5cm	Remove
P19	Eastern Hemlock, White Ash	*Tsuga canadensis, Fraxinus americana*	4-15	4						9 trees average 6cm	Retain
P20	Pussy willow	*Salix spp.*	4-7	2						4 trees, average 6cm	Remove
P21	Pussy willow	*Salix spp.*	3-8	2						11 trees, average 6cm	Remove

Codes		
DBH	Diameter at Breast Height	*(cm)*
TI	Trunk Integrity	*(G, F, P)*
CS	Crown Structure	*(G, F, P)*
CV	Crown Vigor	*(G, F, P)*
CDB	Crown Die Back	*(%)*
CW	Crown Width	*(m)*
~ = estimate; (VL) = very light; (L) = light; (M) = moderate; (H) = heavy		

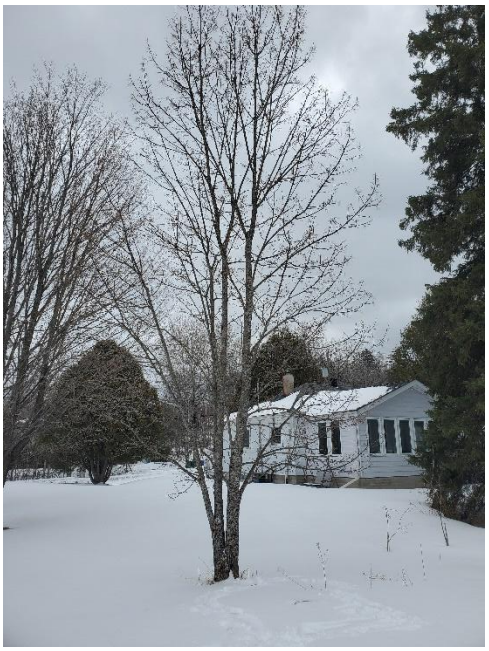
Table 2. 100% Tally Analysis of P22

Location: 20 Cairns Cres
Date: 20-21 March 2023
Surveyor: IB
Stations Tallied: 100% tally of diciduous trees ≥ 6cm DBH and coniferous trees ≥ 2m in height within clearing envelope

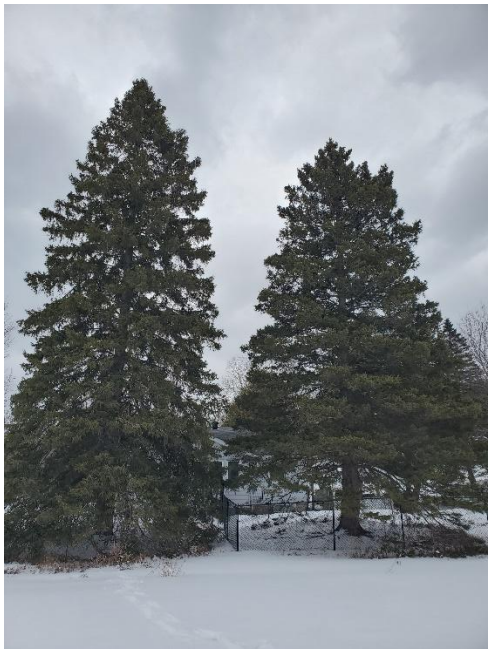
Stand Analysis Tally (by Species, Size Class and Quality Class)

Tree Size Class >>>>	6-9 cm		10-24 cm		Small 26-36 cm		Medium 38-48 cm		Large 50 cm +		Total All Sizes	
Species	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*
Balsam Fir	81	134	19	59	3	10					***103***	***203***
Sugar Maple	90	84	39	126	32	40	12	14	6		***179***	***264***
Ironwood	62	56	21	34	8						***91***	***90***
Basswood	20	8	5	7	1		2	1	2		***30***	***16***
Eastern Hemlock		2	5	14		9		1			***5***	***26***
Black Cherry	2	4	5	2							***7***	***6***
White Ash	160	27	84	14	15	5	2				***261***	***46***
White Spruce				3							***0***	***3***
Yellow Birch	20	32	15	30	4	6	3	2			***42***	***70***
American Beech			1	2				1		1	***1***	***4***
Eastern Cottonwood	15	5	30	37	5	30	2	1			***52***	***73***
Red Oak	3	1				1					***3***	***2***
Eastern White Cedar	7	3	5	4		1					***12***	***8***
Silver Maple	3	5		1							***3***	***6***
Striped Maple	3										***3***	***0***
Total Number of Trees	466	361	229	333	68	102	21	20	8	1	792	817

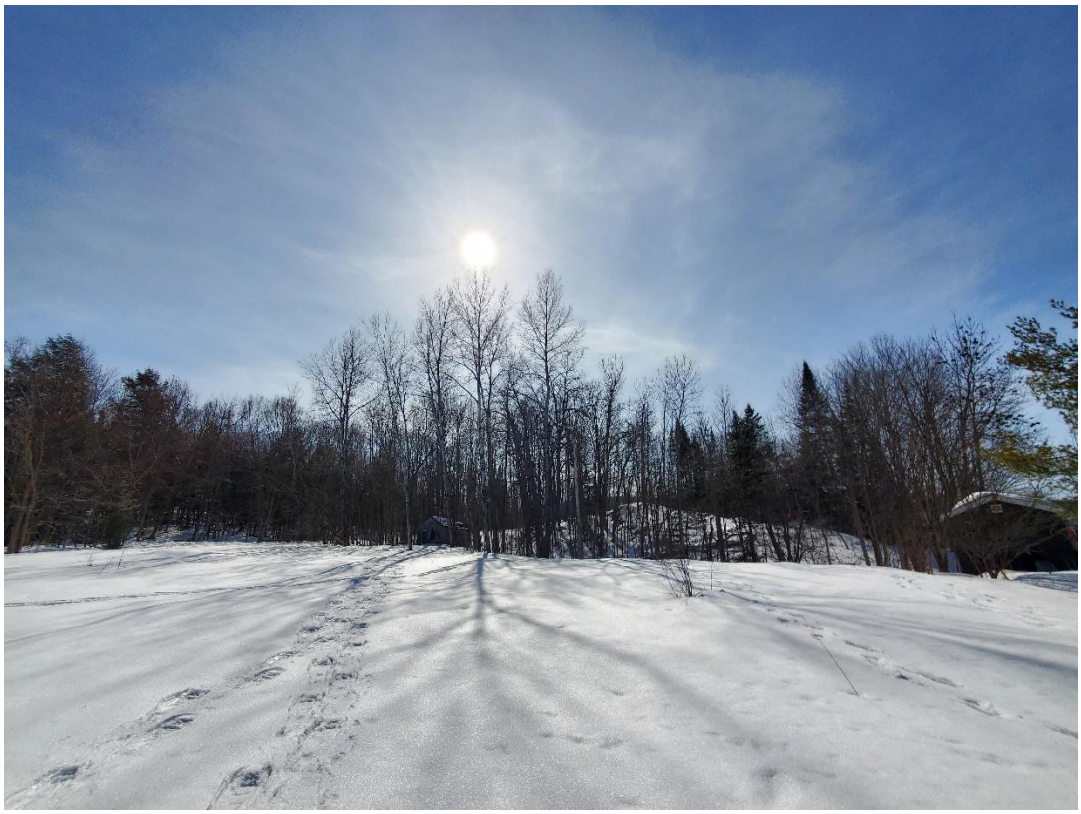
Appendix A. Photographs of Trees



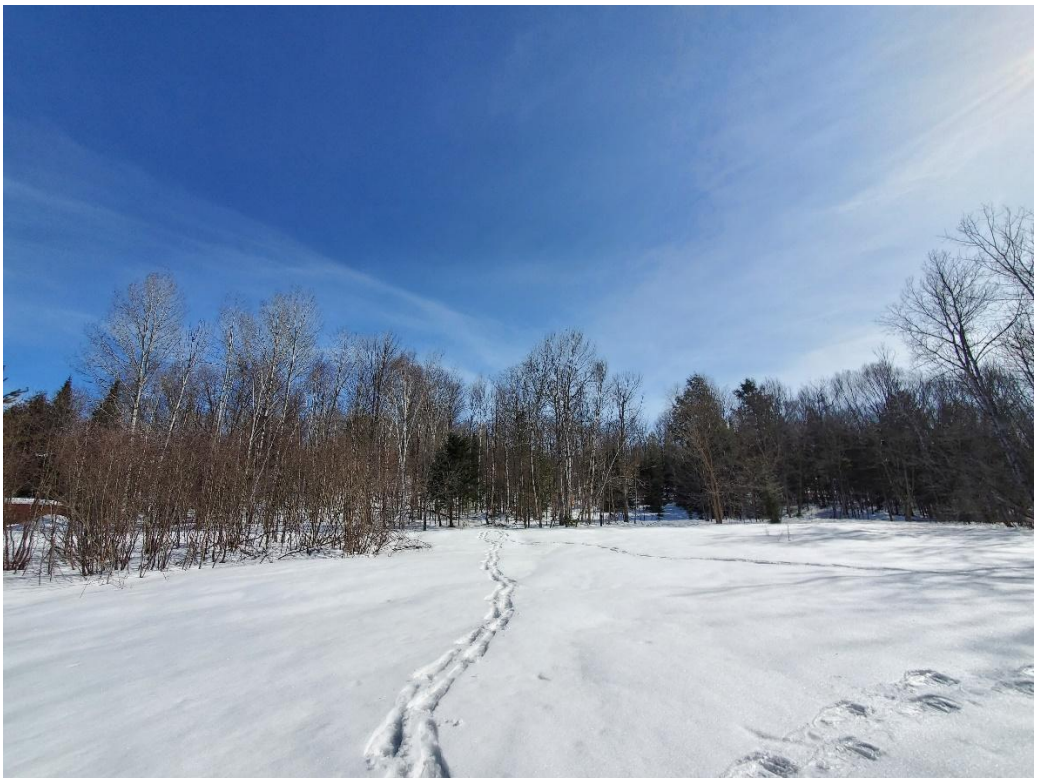
Tree 1



Tree 2-3

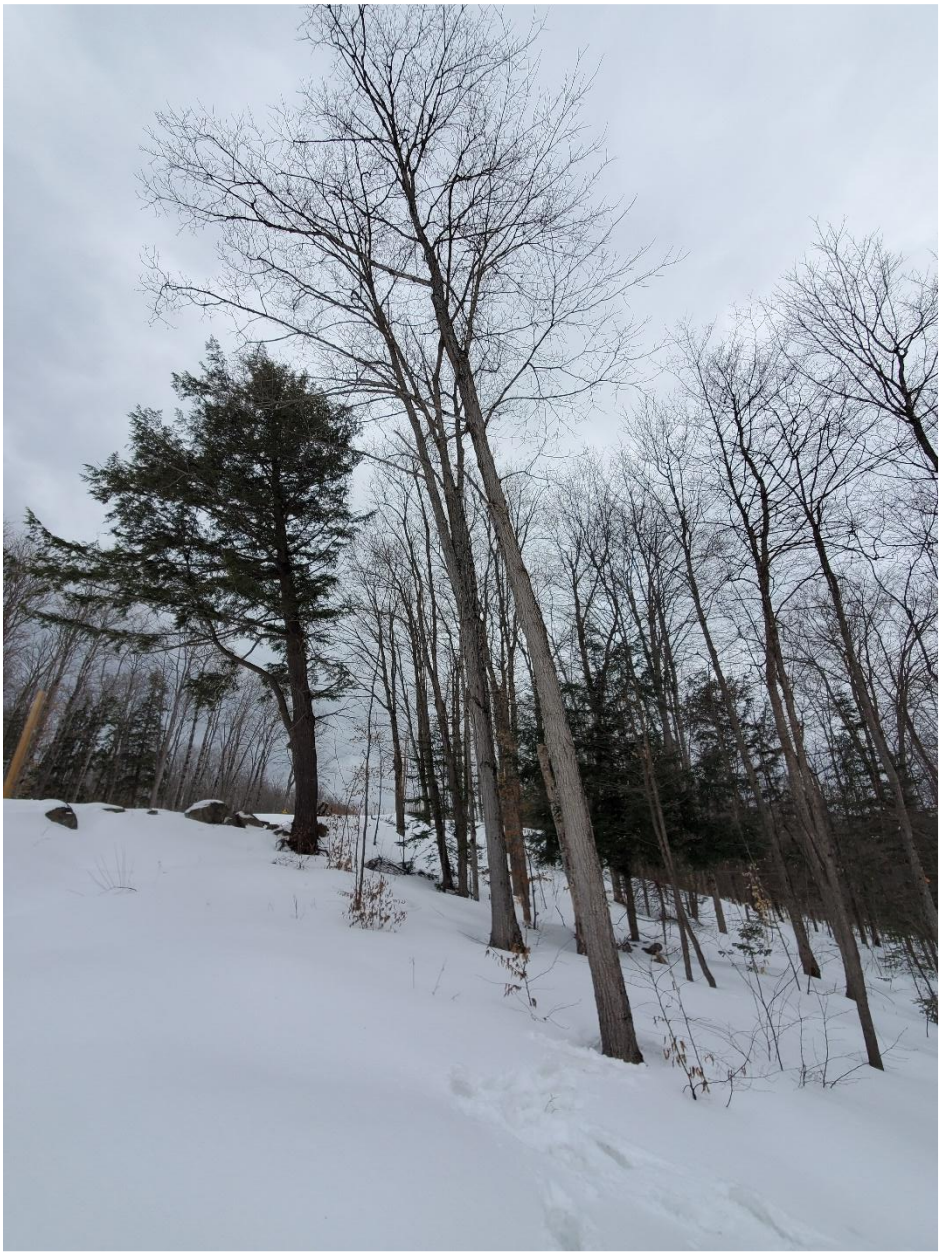


Looking west from north end of property

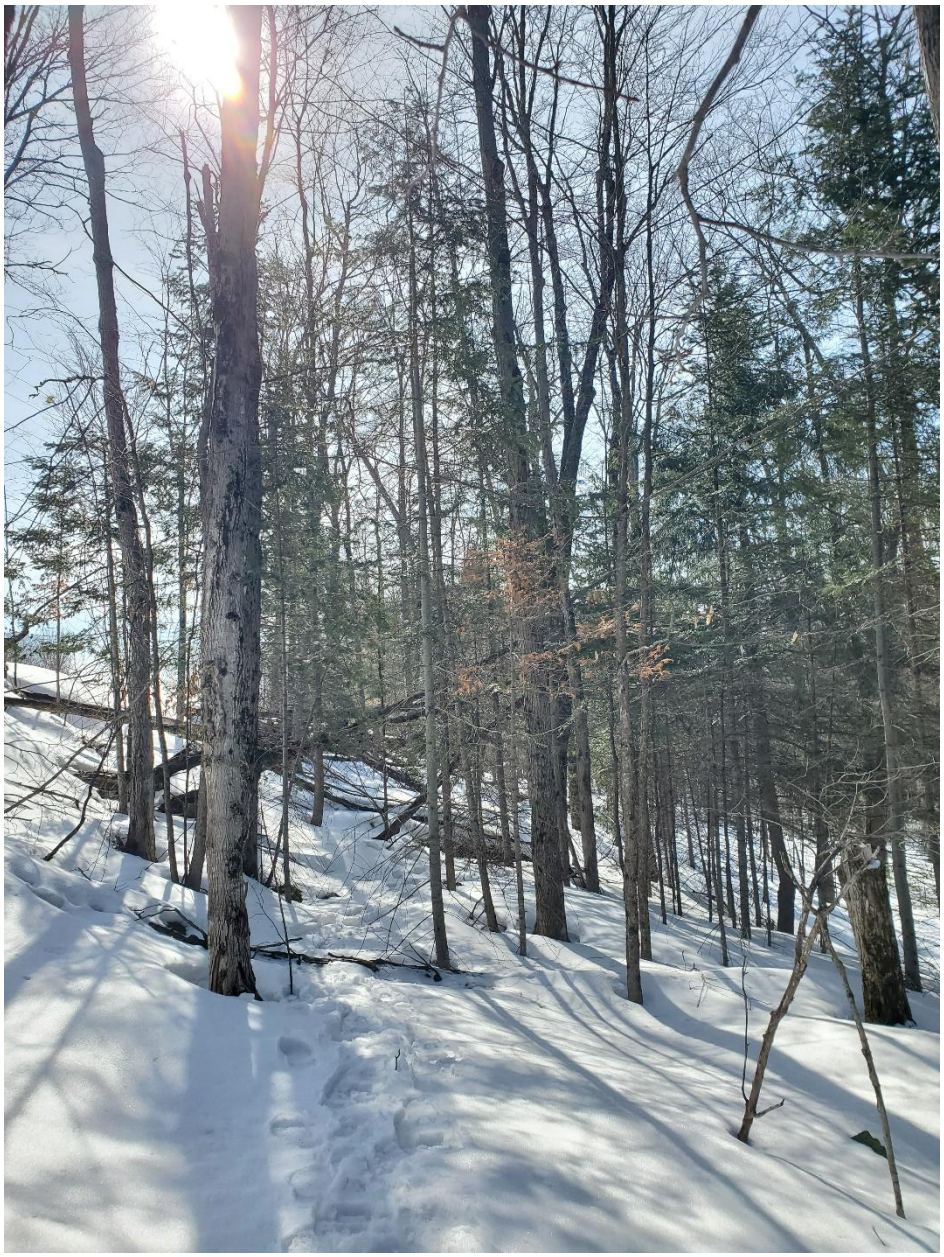


Looking south from north end of property

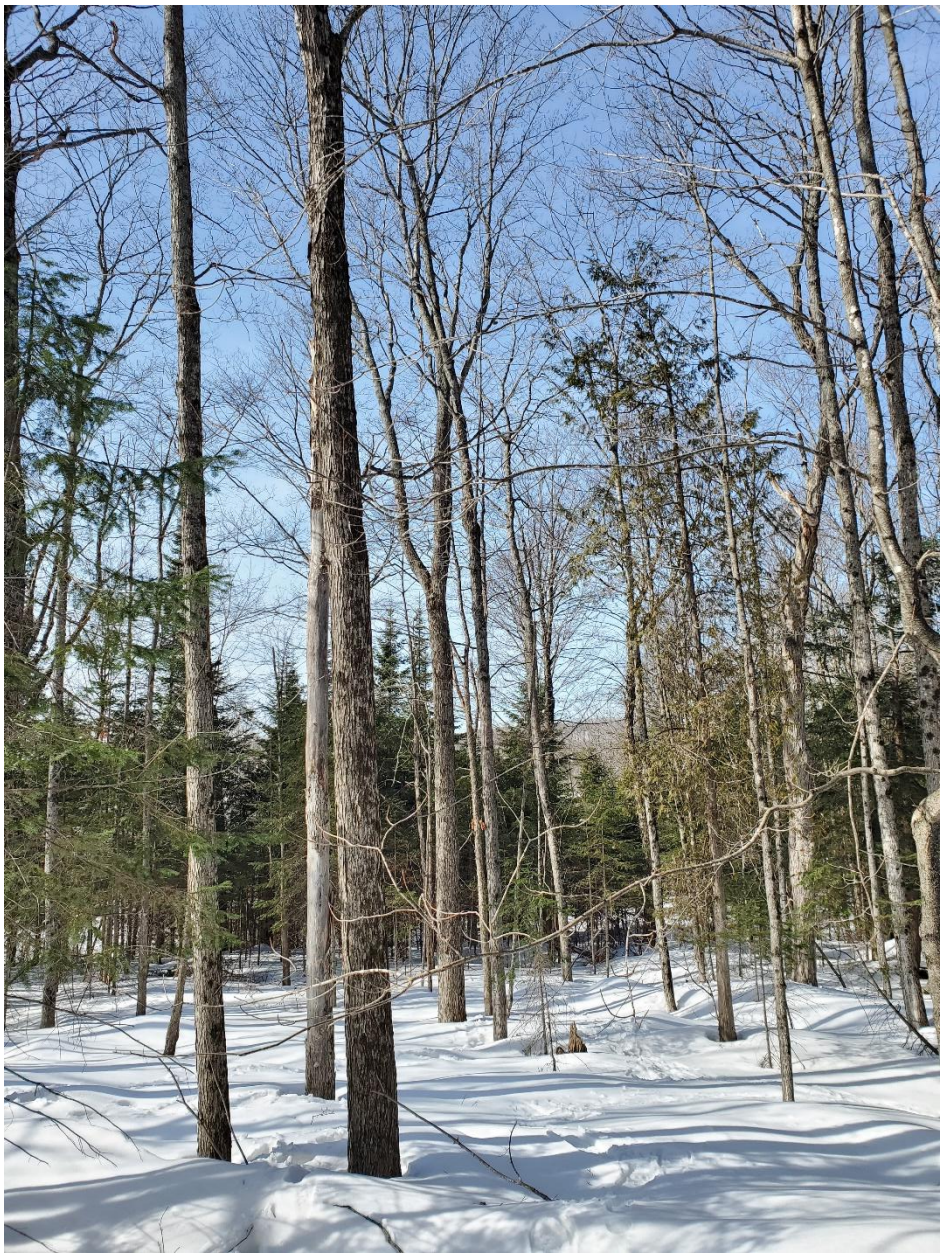
East side of property as seen from Kitchen Road South



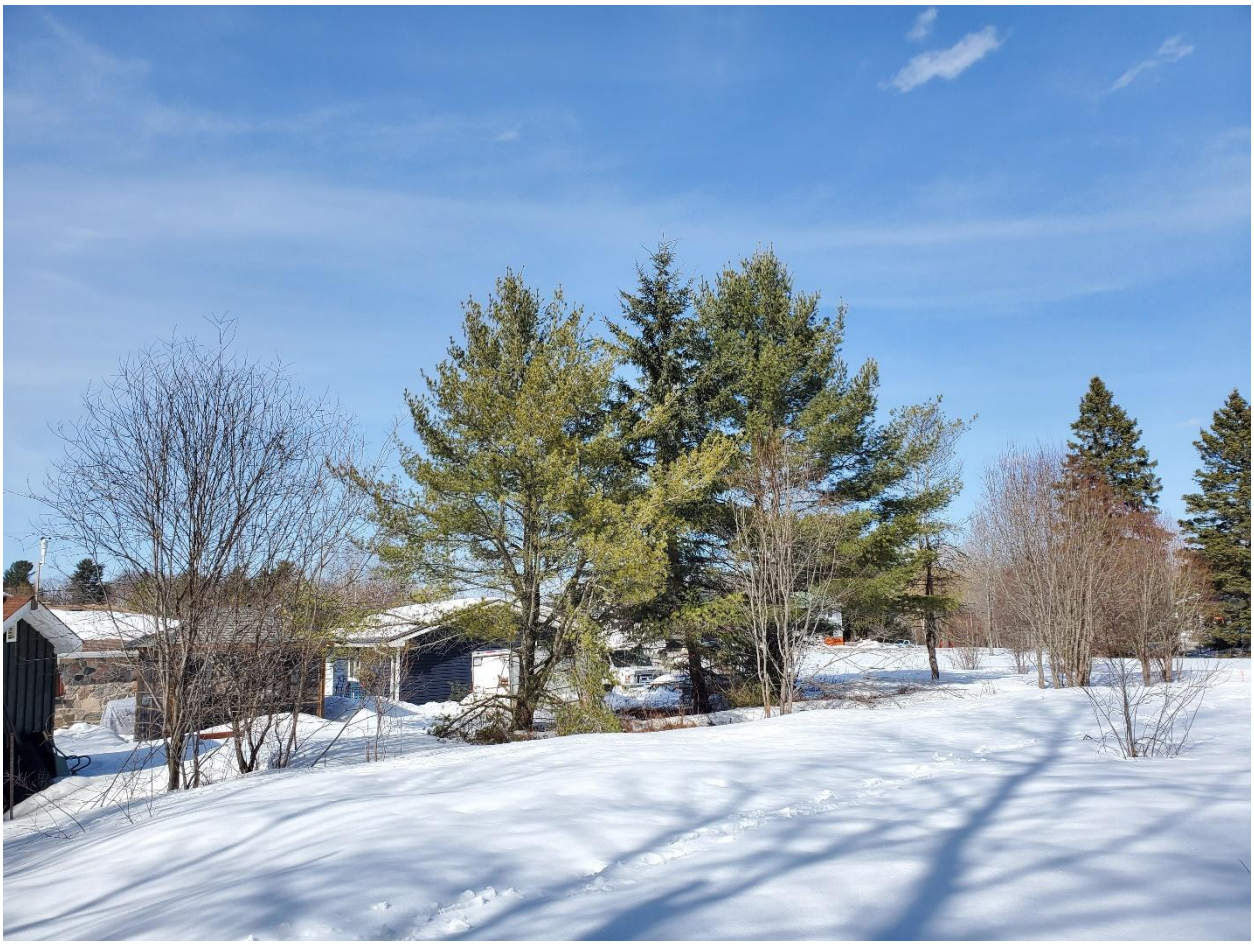
Southeast corner of property as seen from Kitchen Road South



Trees along south end of property (looking west)



Trees along west end of property (looking south)



Tree 559-563 and P21