

**Forest Assessment/Tree Inventory and Preservation Plan Report
1200 King Road
Burlington, ON**

prepared for

Penta Properties Inc.
c/o Metropolitan Consulting Inc.
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prepared by



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1.0 INTRODUCTION

Kuntz Forestry Consulting Inc. was retained by Penta Properties Inc. to complete Forest Assessment, and Tree Inventory and Preservation Plan and Report in support of a development application for a property located at 1200 King Road in Burlington, Ontario.

The work plan for this study included the following:

- Prepare inventory of tree resources over 15cm DBH occurring on subject property and within 6m of the subject property;
- Prepare an 100% tally tree inventory of tree polygons outside of the large wooded feature.
- Assess the woodlot using standard forest assessment protocol (point sampling using a BAF2 prism) to determine species composition, size class distribution, health and basal area.
- Conduct hazard assessment of trees within striking distance of the proposed development.
- Evaluate potential tree and woodland saving opportunities based on proposed development plans;
- Document the findings in a Forest Assessment and Tree Inventory and Preservation Plan report.

2.0 METHODOLOGY

Field investigations occurring on 17 and 19 March 2015 assessed and identified individual trees, tree polygons and wooded features.

Individual tree resources were assessed utilizing the following parameters:

Tree # - number assigned to tree that corresponds to Figure 1.

Species - common and botanical names provided in the inventory table.

DBH - diameter (centimetres) at breast height, measured at 1.4 m above the ground.

Condition - condition of tree considering trunk integrity, crown structure, and crown vigour. Condition ratings include poor (P), fair (F) and good (G).

Comments - additional relevant detail.

Trees measuring over 15cm diameter at breast height (DBH) on the subject property and within six metres of the subject property were identified in the tree inventory. Trees were located using a Trimble GeoExplorer® 6000 series handheld GPS unit. The locations of Butternut trees (*Juglans cinerea*) encountered were also located using the GPS unit; however, an extensive search for Butternut trees was not conducted as part of this study. Refer to Table 1 for the individual tree inventory.

Trees situated in clusters outside of the wooded feature to the southwest were inventoried as Tree Polygons. Tree Polygons are identified by a "P" in front of the tree number. Tree polygons were assessed using a 100% tally of trees. Refer to Table 2 for the 100% tally of trees.

Trees within striking distance of the proposed development (western limit of Lots 1, 3, 27 and Block 3, northern limit of Lot 1, and southern limit of Block 3 and 4) were assessed

for hazard potential. Potential hazard trees were located using the GPS unit and marked with orange flagging tape.

The wooded feature to the west of the property was assessed using standard forest assessment protocol (point sampling using a BAF2 prism) to determine species composition, size class distribution, health and basal area. Sampling points were placed approximately 60 metres apart and approximately 60m away from the edge of the wooded feature and/or the property line. Areas found within the development setback for Falcon Creek and the pond were not included as part of the assessment. The portion of the wooded feature found on the adjacent property to the south and east was not assessed in detail. The wooded feature was divided into Compartments based on visual observations, results of the point sampling, and aerial photo interpretation; therefore, the boundaries of the Compartments shown on Figure are approximate. Compartments are areas with similar characteristics such as species composition, size class distribution, basal area and health. Trees tallied were divided into Acceptable Growing Stock (AGS) or Unacceptable Growing Stock (UGS) based on their health and condition. All Ash species were assumed to be UGS based on the prevalence of Emerald Ash Borer (*Agrilus planipennis*). Refer to Appendix A for the stand analysis field sheets.

3.0 EXISTING SITE CONDITIONS

The northeastern portion of the subject property is composed of open, ploughed field. Two tree polygons were found to the northeast of the property, adjacent to King Road. The southwestern portion of the property is composed of a wooded area with a pond and creeks running west to east. Refer to Figure 1 for the existing conditions.

3.1 Individual Tree Resources

The inventory documented one individual tree on the subject property. The tree found was an Eastern Cottonwood (*Populus deltoides*). Refer to Table 1 for the detailed tree inventory table and Figure 1 for the location of the trees.

3.2 Tree Polygons

The inventory documented two tree polygons on the subject property and within 6m of the subject property. Tree Polygon 1 (P1) was composed of 86% Green Ash (*Fraxinus pennsylvanica*), 12% Poplar species (*Populus* spp.), 2% Willow species (*Salix* spp.) and 1% White Elm (*Ulmus americana*) with a total of 147 trees. The understorey in this area was composed predominantly of Common Buckthorn (*Rhamnus cathartica*) and Hawthorns (*Crataegus* spp.) with limited tree regeneration and groundcover vegetation. Several dead, standing Elm were observed. Many of the Green Ash had signs and symptoms of Emerald Ash Borer (*Agrilus planipennis*) infestation.

Tree Polygon 2 (P2) was composed of 81% Green Ash, 8% Poplar species, 4% White Elm with 7% other species including, Black Cherry (*Prunus serotina*), Sugar Maple (*Acer saccharum*), Bitternut Hickory (*Carya cordiformis*), Black Walnut (*Juglans nigra*), Basswood (*Tilia americana*), Cherry species (*Prunus* spp.), Manitoba Maple (*Acer negundo*), Willow species, and Bur Oak (*Quercus macrocarpa*) for a total of 509 trees. There was minimal understorey in the polygon, comprised predominantly of Common Buckthorn and Hawthorns. Many of the trees had grapevine (*Vitis* sp.) competition.

Refer to Table 2 for the 100% tally sheets and Figure 1 for the location of the tree polygons.

3.3 Wooded Feature

The wooded feature to the southwest of the property was divided into Compartments A and 1 to 7 and are discussed below.

3.3.1 Compartments

Compartment A (CA) is located on the neighbouring property to the south and east. Point sampling was not conducted within this compartment. Based on visual assessments, this compartment is dominated by Green Ash. There is minimal understorey vegetation found within this compartment. Many of the trees are in decline and have grapevine competition.

Compartment 1 (C1) is an area located north of Falcon Creek. It is an relatively open wooded area dominated by Green Ash in the small (26-36 cm DBH) size category. The basal area is relatively low at 9.33 m²/hectare. The understorey in this compartment is sparse and composed predominantly of Common Buckthorn and Hawthorn species. There are scattered pockets of Staghorn Sumac (*Rhus typhina*) within the compartment. There is an abandoned apiary to the south of this compartment, within the development setback of Falcon Creek. This compartment has signs of an anthropogenic history and is a low constraint to development. A Butternut tree (*Juglans cinerea*) was found within 25m of Block 3 and should be evaluated.

Compartment 2 (C2) is located to the west of Compartment 1 and north of Falcon Creek. This area is a dense Common Buckthorn thicket with scattered Hawthorn and Green Ash. Point sample plot 4 did not identify any trees. This compartment is a low constraint to development based on the high density of invasive Common Buckthorn and low density of primarily Ash trees.

Compartments 3 (C3) is located south of Falcon Creek and is a mature hardwood forest with a basal area of 15 m²/hectare. The trees in this compartment are distributed across all size classes. The species composition of this compartment is 40% Red Oak (*Quercus rubra*), 20% Red Maple (*Acer rubrum*), 20% Green Ash, 13% Bur Oak, 7% Shagbark Hickory (*Carya ovata*), with other species including Black Cherry. Grey Dogwood (*Cornus racemosa*) and Green Ash regeneration was found in the understorey of this compartment. Minimal growth of Garlic Mustard (*Alliaria petiolata*) was also observed. This compartment is a moderate to high constraint to development based on the health, species composition, size distribution of trees, as well as the presence of Butternut trees within and adjacent to this compartment. Butternut health assessments of the Butternut trees within this compartment will be required to determine the status of these trees. The level of constraint may be re-evaluated following the completion of these assessments.

Compartment 4 (C4) comprises the majority of the wooded feature. This area is characterized by Green Ash and Common Buckthorn in varying densities. An open meadow area was found within this compartment. The species composition of this area is 96% Green Ash, with other species including Bur Oak, Manitoba Maple, and Black Cherry. The basal area of this area is 12 m²/hectare. The majority of the trees were within the polewood (10-24cm DBH) size class. This compartment is a low constraint to

development due to the high proportion of Green Ash and the prevalence of Emerald Ash Borer, as well as the presence of invasive Common Buckthorn.

Compartment 5 (C5) is located along the eastern property line and continues onto the neighbouring property. This area is relatively open and characterized by scattered, mature Black Walnut. The basal area in the compartment is relatively low at 5 m²/hectare. This compartment has signs of an anthropogenic history, including the remnants of a old foundation. There is minimal understorey vegetation in this compartment. This compartment is a low constraint to development based on its low diversity, density and anthropogenic history.

Compartment 6 (C6) is located to the north and west of the pond and is a mature hardwood forest with a basal area of 24 m²/hectare. Trees within this compartment are found within all the size classes. The species composition of this compartment is 33% Shagbark Hickory, 29% Green Ash, 21% Bur Oak, 13% Red Oak, and 4% Black Cherry. The majority of the trees were in good health and condition. There is minimal understorey vegetation with species including Grey Dogwood and Common Buckthorn. This compartment is a moderate constraint to development based on its health, species composition, density and size distribution.

Compartment 7 (C7) is located in the southern point of the subject property and is a relatively open wooded area. The species composition in this area is 60% Green Ash, 27% Black Cherry, 7% White Elm and 7% Shagbark Hickory with a basal area of 15 m²/hectare. The understorey layer is dominated by Honeysuckle species (*Lonicera* spp.), grapevine and Common Buckthorn. This area appears to be fairly disturbed and is in close proximity to existing GO station. This compartment is a low constraint to development based on its density, species composition, and health.

Refer to Appendix A for the stand analysis field sheets and Figure 1 for the location of the compartments. These areas may be subject to the Region of Halton's Tree By-law no. 121-05.

3.3.2 Butternut Trees

Five Butternut trees were encountered and identified during this study. Butternut trees are protected by the Endangered Species Act, 2007. Formal Butternut Health Assessments were not conducted as part of this study and an extensive search for Butternut trees on the subject property was not completed. The Butternut trees should be assessed by a Butternut Health Assessor designated by the Ministry of Natural Resources. Refer to Figure 1 for the location of the Butternut trees.

3.3.3 Hazard Trees

One 35cm DBH Green Ash was identified as a potential hazard. It is located on neighbouring property, to the south of Block 3. It is recommended that this tree be removed prior to any development works on the subject property, such as earthworks and grading. Permission from the neighbouring property owner will be required prior to the removal of this tree. Refer to Figure 1 for the location of the hazard tree.

No other potential hazards were found within striking distance of the proposed lots; however, declining Ash with grapevine competition were noted throughout CA, C1 and

C2. It is recommended that another hazard tree assessment be conducted following tree removals and prior to proposed works to ensure no trees have become hazards since the completion of this report and as a result of tree removal activities. A hazard tree assessment is also recommended within striking distance of the proposed road within the wooded area, following tree removals.

4.0 PROPOSED DEVELOPMENT

The proposed development consists of a residential subdivision composed of 27 lots and 8 blocks. A road is proposed through the subject property, connecting King Road to the existing GO station. Future development is proposed within Blocks 1 and 2. Refer to Figure 1 for the proposed site plan.

5.0 DISCUSSION

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

5.1 Development Impacts/Tree Removals

The proposed development will preclude the retention of Tree 1, tree polygons P1 and P2 and the majority of Compartments 1 and 2. The removal of a portion of Compartments 4 and 6 will be required to accommodate the proposed road.

Compartments 3 to 7 are located within Blocks 1 and 2 (designated for future development). These compartments may be subject to removal pending future review of site plans for Blocks 1 and 2. Development impacts and tree removals for Blocks 1 and 2 will be re-evaluated once site plans become available as the current extent of development is unknown. Refer to Figure 1 for the proposed tree and compartment removals.

5.2 Tree Preservation

Compartment CA and a small portion of Compartments 1 and 2 may be preserved with the use of appropriate tree protection measures. Silt fencing erected along the limit of disturbance (west of Lot 1, 3, 27 and Block 3, north of Lot 1 and south of Blocks 3 and 4) may be used to protect the tree resources. Tree protection measures will have to be implemented prior to construction to ensure tree resources designated for retention are not impacted by development. Trees found adjacent to the current proposed limit of disturbance should be monitored and marked for removal, by a Certified Arborist, if they will become destabilized as a result of disturbance to their root zones. Permission from the neighbouring property owner will be required prior to the removal of boundary or neighbouring trees.

Compartments 3 to 7 within Blocks 1 and 2 may be tentatively preserved by silt fencing erected at the proposed limit of disturbance (north and south of the proposed road within the wooded area, north and west of Lot 1, west of Lots 3 and 27 and south and west of Block 3). Trees found within the wooded area, adjacent to the current proposed limit of disturbance should be monitored and marked for removal, by a Certified Arborist, if they will become destabilized as a result of disturbance to their root zones. Refer to Figure 1

for the proposed tree preservation, tree preservation notes, and location of the proposed tree protection fencing (silt fence).

6.0 SUMMARY AND RECOMMENDATIONS

Kuntz Forestry Consulting Inc. was retained by Penta Properties Inc. to complete a Forest Assessment / Tree Inventory and Preservation Plan in support of a development application for a property located at 1200 King Road in Burlington.

The subject property is composed of open, ploughed field and wooded features. The findings of the study indicate a total of one tree, two tree polygons and seven compartments on the subject property. The preservation of Compartments CA, a portion of the Compartments 1 and 2 and the tentative preservation of Compartments 3 to 7 within Blocks 1 and 2, will be possible provided appropriate tree protection measures are installed prior to the proposed works. The removal of one tree, two tree polygons and portions of the wooded feature will be required to accommodate the proposed development. The majority of the wooded feature has a prevalence of invasive Common Buckthorn.

The following recommendations are suggested to minimize impacts to trees identified for preservation. Refer to Figure 1 for additional tree preservation notes.

- Tree protection measures will have to be implemented prior to earthworks and grading to ensure the trees identified for preservation are not impacted by the development.
- Branches and roots that extend past 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 mitigation measures are implemented.
- Construction activity including clearing of vegetation or other activities should occur outside breeding bird season to avoid any potential negative impacts on nesting birds.

Respectfully Submitted,
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7.0 REFERENCES

Government of Ontario. 2007. Endangered Species Act, 2007 S.O. 2007, Chapter 6.

The Regional Municipality of Halton. 2001. Tree By-law no. 121-05.

Table 1. Detailed Tree Inventory Table

Location: 1200 King Road, Burlington

Date: 19 Mar. 2015 Surveyors: AC

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	CDB	Comments	Retain/Remove
1	Eastern Cottonwood	<i>Populus deltoides</i>	16,11	FG	G	G		Union near ground, stem inside fence	RETAIN
END									

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	(%)
~ = estimate; (L) = light; (M) = moderate; (H) = heavy		

Table 2. 100% Tally Sheets

Location: 1200 King Road, Burlington
Date: 17 March 2015
Surveyor: AC
Compartment Number: Tree Polygon P1
Stations Talled: 100% Tally
Stand Analysis Tally (by Species, Size Class and Quality Class)

Tree Size	Class >>>>	Polewood	Sawtimber Sizes						Total All Sizes		
			10-24 cm		Small 26-36 cm		Medium 38-48 cm		Large 50 cm +		AGS
<i>Species</i>		AGS	UGS	AGS	UGS	AGS	UGS	AGS	UGS	AGS	UGS
Willow species (<i>Salix</i> spp.)							1		2	0	3
Green Ash (<i>Fraxinus pennsylvanica</i>)			91	30			4		1	30	96
Poplar species (<i>Populus</i> spp.)			9	3	5					3	14
White Elm (<i>Ulmus americana</i>)			1							0	1
										0	0
Total Number of Trees		0	101	33	5	0	5	0	3	33	114
Total:										147	

Compartment Number: Tree Polygon P2
Stations Talled: 100% Tally
Stand Analysis Tally (by Species, Size Class and Quality Class)

Tree Size	Class >>>>	Polewood	Sawtimber Sizes						Total All Sizes		
			10-24 cm		Small 26-36 cm		Medium 38-48 cm		Large 50 cm +		AGS
<i>Species</i>		AGS	UGS	AGS	UGS	AGS	UGS	AGS	UGS	AGS	UGS
Green Ash (<i>Fraxinus pennsylvanica</i>)			387		17		4		2	0	410
Black Cherry (<i>Prunus serotina</i>)		1	2		1					1	3
Sugar Maple (<i>Acer saccharum</i>)		3		1	1					4	1
Bitternut Hickory (<i>Carya cordiformis</i>)		3								3	0
Poplar species (<i>Populus</i> spp.)		17	13		12		1			17	26
White Elm (<i>Ulmus americana</i>)		17	4							17	4
Black Walnut (<i>Juglans nigra</i>)		6		3						9	0
Basswood (<i>Tilia americana</i>)			1							0	1
Cherry species (<i>Prunus</i> spp.)				1	1					1	1
Willow species (<i>Salix</i> spp.)			1		2	1				1	3
Manitoba Maple (<i>Acer negundo</i>)			4							0	4
Bur Oak (<i>Quercus macrocarpa</i>)		1		2						3	0
										0	0
Total Number of Trees		48	412	7	34	1	5	0	2	56	453
Total:										509	

Appendix A. Stand Analysis Field Sheets

Location: 1200 King Road, Burlington
Date: 17, 19 march 2015
Surveyor: AC
Compartment Number: Compartment 1
Stations Talled: P1, P2, P3
Stand Analysis Tally (by Species, Size Class and Quality Class)

Tree Size	Class >>>>	Polewood 10-24 cm		Sawtimber Sizes						Total All Sizes	
				Small 26-36 cm		Medium 38-48 cm		Large 50 cm +			
Species		AGS	UGS	AGS	UGS	AGS	UGS	AGS	UGS	AGS	UGS
Ag					10	1				1	10
Cherry species (<i>Prunus</i> sp.)		1		1						2	0
Wb						1				1	0
										0	0
										0	0
										0	0
Total Number of Trees		1	0	1	10	2	0	0	0	4	10
BA (m²/ha)		0.67	0.00	0.67	6.67	1.33	0.00	0.00	0.00	2.67	6.67
Total BA (m²/ha)		0.67		7.33		1.33		0.00		9.33	

Additional Information

Topography: Upland
Soil Moisture: Fresh-moist
Ecological Integrity: Open, antropogenic/cultural history, Buckthorn and Hawthorn
Other Concerns:
Regeneration Notes: Grasses and Wild Red Raspberry

Location: 1200 King Road, Burlington
Date: 17, 19 march 2015
Surveyor: AC
Compartment Number: Compartment 3
Stations Tallied: P5, P7

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

Tree Size	Class >>>>	Polewood 10-24 cm		Sawtimber Sizes						Total All Sizes	
				Small 26-36 cm		Medium 38-48 cm		Large 50 cm +			
Species		AGS	UGS	AGS	UGS	AGS	UGS	AGS	UGS	AGS	UGS
Or		1		1	1	1		1	1	4	2
Mr		1		1		1				3	0
Cb										0	0
Ag			3							0	3
Ob								2		2	0
Hs				1						1	0
										0	0
Total Number of Trees		2	3	3	1	2	0	3	1	10	5
BA (m²/ha)		2.00	3.00	3.00	1.00	2.00	0.00	3.00	1.00	10.00	5.00
Total BA (m²/ha)		5.00		4.00		2.00		4.00		15.00	

Additional Information

Topography: Rolling upland
Soil Moisture: Dry-Fresh
Ecological Integrity: Grey dogwood, Garlic Mustard (L), mature trees
Other Concerns:
Regeneration Notes: Some Ag

Location: 1200 King Road, Burlington
Date: 17, 19 March 2015
Surveyor: AC
Compartment Number: Compartment 4
Stations Tallied: P6, P8, P9, P11, P12, P13, P14, P16, P17, P20, P21, P23

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

Tree Size Class >>>>	Polewood 10-24 cm		Sawtimber Sizes						Total All Sizes	
			Small 26-36 cm		Medium 38-48 cm		Large 50 cm +			
Species	AGS	UGS	AGS	UGS	AGS	UGS	AGS	UGS	AGS	UGS
Ag		54		11		2		2	0	69
Ob	1								1	0
Mm		1							0	1
Cb		1							0	1
									0	0
Total Number of Trees	1	56	0	11	0	2	0	2	1	71
BA (m²/ha)	0.17	9.33	0.00	1.83	0.00	0.33	0.00	0.33	0.17	11.83
Total BA (m²/ha)	9.50		1.83		0.33		0.33		12.00	

Additional Information

Topography: Lowland
Soil Moisture: Fresh-moist, wet
Ecological Integrity: Buckthorn
Other Concerns:
Regeneration Notes:

Location: 1200 King Road, Burlington
 Date: 17, 19 march 2015
 Surveyor: AC
 Compartment Number: Compartment 5
 Stations Tallied: P10, P15

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

Tree Size Class >>>>	Polewood 10-24 cm		Sawtimber Sizes						Total All Sizes	
			Small 26-36 cm		Medium 38-48 cm		Large 50 cm +			
Species	AGS	UGS	AGS	UGS	AGS	UGS	AGS	UGS	AGS	UGS
Ag		1							0	1
Cb		1							0	1
Wb			2		1				3	0
									0	0
Total Number of Trees	0	2	2	0	1	0	0	0	3	2
BA (m²/ha)	0.00	2.00	2.00	0.00	1.00	0.00	0.00	0.00	3.00	2.00
Total BA (m²/ha)	2.00		2.00		1.00		0.00		5.00	

Additional Information

Topography: Upland
 Soil Moisture: Dry-Fresh
 Ecological Integrity:
 Other Concerns:
 Regeneration Notes: Minimal to no regeneration

Location: 1200 King Road, Burlington
Date: 17, 19 march 2015
Surveyor: AC
Compartment Number: Compartment 6
Stations Talled: P18, P19

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

Tree Size Class >>>>	Polewood 10-24 cm		Sawtimber Sizes						Total All Sizes	
			Small 26-36 cm		Medium 38-48 cm		Large 50 cm +			
Species	AGS	UGS	AGS	UGS	AGS	UGS	AGS	UGS	AGS	UGS
Ag		3		4					0	7
Or	1		1				1		3	0
Ob		1	1				3		4	1
Hs	2		4		1		1		8	0
Cb	1								1	0
									0	0
Total Number of Trees	4	4	6	4	1	0	5	0	16	8
BA (m²/ha)	4.00	4.00	6.00	4.00	1.00	0.00	5.00	0.00	16.00	8.00
Total BA (m²/ha)	8.00		10.00		1.00		5.00		24.00	

Additional Information

Topography: Rolling upland/valley slope
Soil Moisture: Dry-Fresh/Moist
Ecological Integrity: Buckthorn, dogwood, mature hardwood
Other Concerns:
Regeneration Notes:

Location: 1200 King Road, Burlington
Date: 17, 19 march 2015
Surveyor: AC
Compartment Number: Compartment 7
Stations Tallied: P22

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

Tree Size	Class >>>>	Polewood 10-24 cm		Sawtimber Sizes						Total All Sizes	
				Small 26-36 cm		Medium 38-48 cm		Large 50 cm +			
Species		AGS	UGS	AGS	UGS	AGS	UGS	AGS	UGS	AGS	UGS
Cb						4				4	0
Ag			3		3		3			0	9
Ew		1								1	0
Hs		1								1	0
										0	0
Total Number of Trees		2	3	0	3	4	3	0	0	6	9
BA (m²/ha)		2.00	3.00	0.00	3.00	4.00	3.00	0.00	0.00	6.00	9.00
Total BA (m²/ha)		5.00		3.00		7.00		0.00		15.00	

Additional Information

Topography: Lowland
Soil Moisture: Dry-Fresh
Ecological Integrity: Honeysuckle, GVC (M)
Other Concerns:
Regeneration Notes:

Refer to Appendix B for tree abbreviation codes.

Appendix B. Tree Abbreviation Codes

COMMON NAME	SCIENTIFIC NAME	SPECIES CODES
Balsam Fir	<i>Abies balsamea</i> (L.) Mill.	Bf
Balsam Poplar	<i>Populus balsamifera</i> L.	Pb
Basswood	<i>Tilia americana</i> L.	Bd
Beech	<i>Fagus grandifolia</i> Ehrh.	Be
Bitternut Hickory	<i>Carya cordiformis</i> (Wang.) K. Koch	Hb
Black Ash	<i>Fraxinus nigra</i> Marsh.	Ab
Black Cherry	<i>Prunus serotina</i> Ehrh.	Cb
Black Locust	<i>Robinia pseudo-acacia</i> L.	Lb
Black Spruce	<i>Picea mariana</i> (Mill.) BSP	Sb
Black Walnut	<i>Juglans nigra</i> L.	Wb
Bur Oak	<i>Quercus macrocarpa</i> Michx.	Ob
Butternut	<i>Juglans cinerea</i> L.	Bn
Chestnut	<i>Castanea dentata</i> (March.) Borkh.	Cd
Eastern Hemlock	<i>Tsuga canadensis</i> (L.) Carr.	He
Eastern Red Cedar	<i>Juniperus virginiana</i> L.	Cr
Eastern White Cedar	<i>Thuja occidentalis</i> L.	Cw
European Larch	<i>Larix decidua</i> Mill.	Le
Green Ash	<i>Fraxinus pennsylvanica</i> Marsh.	Ag
Grey Birch	<i>Betula populifolia</i> Marsh.	Bg
Horse Chestnut	<i>Aesculus hippocastanum</i> L.	Ch
Ironwood	<i>Ostrya virginiana</i> (Mill.) K. Koch	Id
Jack Pine	<i>Pinus banksiana</i> Lamb.	Pj
Largetooth Aspen	<i>Populus grandidentata</i> Michx.	Al
Norway Spruce	<i>Picea abies</i> (L.) Karst.	Sn
Pin Cherry	<i>Prunus pensylvanica</i> L.f.	Cp
Poplar	<i>Populus</i> L.	Po
Red Ash	<i>Fraxinus pennsylvanica</i> Marsh.	Ar
Red Maple	<i>Acer rubrum</i> L.	Mr
Red Oak	<i>Quercus rubra</i> L.	Or
Red Pine	<i>Pinus resinosa</i> Ait.	Pr
Red Spruce	<i>Picea rubens</i> Sarg.	Sr
Scots Pine	<i>Pinus sylvestris</i> L.	Ps
Shagbark Hickory	<i>Carya ovata</i> (Mill.) K. Koch	Hs
Silver Maple	<i>Acer saccharinum</i> L.	Ms
Sugar Maple	<i>Acer saccharum</i> Marsh.	Mh
Tamarack	<i>Larix laricina</i> (Du Roi) K. Koch	La
Trembling Aspen	<i>Populus tremuloides</i> Michx.	At
White Ash	<i>Fraxinus americana</i> L.	Aw
White Birch	<i>Betula papyrifera</i> Marsh.	Bw
White Elm	<i>Ulmus americana</i> L.	Ew
White Oak	<i>Quercus alba</i> L.	Ow
White Pine	<i>Pinus strobus</i> L.	Pw
White Spruce	<i>Picea glauca</i> (Moench) Voss	Sw
Willow	<i>Salix</i> L.	Wi
Yellow Birch	<i>Betula alleghaniensis</i> Arnold	By