

ECOLOGICAL AND ECONOMIC VALUES OF PUBLIC TREES FROM THE
MANITOU TREE INVENTORY

By

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Degree of Honours Bachelor of Environmental Management

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Lakehead University

April 2020

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ABSTRACT

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Urban trees are an underappreciated aspect to urban communities and contribute valuable ecosystem services. As of November 2017, the emerald ash borer (*Agrius planipennis*), an invasive beetle from Asia had been found in Winnipeg, Manitoba. The beetle is known for its expanding and rapid dispersal rate throughout North America and is expected to continue to extend its range westward throughout the Canadian prairies. A small, farming community in southern Manitoba, Manitou, lies in the potential path of the beetle which will threaten to kill approximately 40% of the total urban tree population in the community. To determine the economic risk that Manitou is facing, an analysis was completed to determine the value and annual contributions of the public urban tree population within Manitou. Three methods are used to determine the annual contributions from the trees and their values. The three methods used are iTree eco v6, the National Tree Benefits Calculator (NTBC) and the Urban Tree Alliance EAB cost calculator. In addition to calculation annual benefits, the Urban Tree Alliance calculator also estimated the annual costs of treating and removing ash trees. Once all the factors were calculated, strategic and tactical management plans for the best course of action were developed to determine what the management of Manitou's urban tree population should look like for the future. Prioritizing the treatment of larger ash trees (*Fraxinus spp*) that provide a greater number of economic benefits than smaller ash trees and sequentially removing ash trees that have low economic value will be key actions that the unincorporated Town of Manitou can undertake in the future to maintain a healthy urban forest.

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1.0 Introduction

Urban forestry has become a more pressing issue in our modern world with the spread of invasive species, pests, and diseases, threatening trees within city limits. Urban trees and landscapes have been neglected by their residents, politicians, and city workers. This neglect has arisen from undervaluing the benefits urban trees provide through their ecological and economic values.

In Manitoba, two prominent agents have put urban trees at risk; Dutch elm (*Ophiostoma ulma*) disease (DED) and emerald ash borer (EAB). While DED has been problematic for urban foresters in the past, management techniques have been able to control the disease. Recently, the invasion of EAB has been sweeping across Canada and the USA. Emerald ash borer poses an even greater risk than DED because EAB has been virtually unstoppable in its path of destruction. Eventually EAB will reach communities that are overly planted with ash trees and kill all the ash trees within these communities. Like the American elm (*Ulmus americana*), various ash species and varieties were overplanted as an urban tree in southern Manitoba, exacerbating the potential invasion of EAB.

With the EAB invasion presenting itself as a very serious and prominent threat against communities, being able to analyze these trees' ecological and economic value becomes crucial for a community. This allows a community to effectively and efficiently plan how to allocate its resources in keeping and maintaining its urban trees for the community. In addition to preventing value from being lost via DED and EAB, communities should seek to maximize the value they receive from their trees through smart planning, management, and consultation with members of the public.

Being able to attach a numerical value (dollar value) to an individual tree or boulevard of trees would be beneficial for members of the public. This is because it allows them to see and understand the importance of having and maintaining their urban trees and to maximize the trees' benefits for the community. Having a better understanding of what trees bring to a community, besides shade and aesthetic appeal, is crucial for a community to protect and plan for its trees in the future.

1.1. Objective

The objective of this thesis is to calculate the ecological and economic values of all the catalogued public trees within the Town of Manitou. Using data from the 2019 Manitou tree inventory the data will be analyzed through different calculators, such as iTree, to calculate the ecological and economic values. This is to understand other benefits these trees truly provide the town besides providing shade. By analyzing the data, an effective management plan can be created for the town for its trees in the future.

1.2. Hypothesis

The aim of this thesis is to develop an urban tree management plan for the unincorporated Town of Manitou instead of testing a traditional hypothesis. By calculating the values of all the public trees (particularly ash), an effective course of action can be undertaken by the town in how they presently manage their trees and how to prepare for the future. With a threat like EAB imminent to invade, a well designed and articulated plan of action for how the town will take care of its trees is a necessity.

2.0 Literature Review

2.1. Urban Forestry

Urban forestry is the management of trees that lie within an urban area and provide physiological, sociological and economic well-being services to the area (Carter 1993). The concept was first introduced to North America in 1894, but underwent a revival in the 1960s due to a shift in challenges related to urban environments and growing urban trees (Konijnendijk et al 2006). With a shift of Canada's population moving from rural settings to urban centres (Statistics Canada 2018), urban trees have become increasingly more important. Urban trees can be placed in a variety of land uses within an urban centre, such as on front lawns, boulevards, parks, public areas/lands, and shelterbelts. Urban trees can be found in public areas and private properties and are maintained by municipal staff and individual homeowners/citizens (Miller et al. 2015). Urban forests serve important roles for urban centres from an economic and environmental standpoint; e.g., urban trees can provide services through storm water mitigation, pollution control, carbon sequestration, wildlife habitat, UV protection (shade), human health benefits, energy savings, and aesthetics (Dwyer et al 1992).

2.2. Urban Forest Management

In recent years there has been a shift in how urban forests have been managed traditionally in the past. More municipalities and urban centres have been adopting and implementing urban forest management plans because of the increased mortality rates on urban tree populations from introduced diseases and insects (Herms & McCullough 2014) and the general public's increased appreciation for the different values urban trees contribute to communities. This has been amplified by the arrival of the emerald ash borer and has forced communities to take action to protect their urban tree populations

(Marchant 2014). From these management plans, urban centres have started implementing street tree inventories to take account of their trees, which in turn help urban centres manage their trees more efficiently and reduce potential liability resulting from tree failure (Smiley & Baker 1988).

A major guiding principle that has been used in designing urban forest management plans is the 10% rule, which states that no more than 10% of a species should be planted within an urban centre (Santamour 1999). This rule is to safeguard a community from a potential weather events (such as ice storms or droughts) or insect and disease outbreaks that could eradicate an urban tree population if the population were planted heavily with the same species. Different types of genera should be planted from approved tree lists for the region or community (Galvin 1999) to provide resilience in an urban forest. Moving toward diversification of an urban tree population is promoted by the idea of planting trees less as a monoculture and educating the public on how good tree selection can impact their quality of life and economic standing through proper planning and planting (Bassuk 1990). With climate change's impact progressively becoming larger every year, the frequency and severity of natural ecological impacts, (e.g., flooding, storms, insect and disease outbreaks) will increase over the coming years (Tubby & Webber 2010) and will require urban forest managers to be more attentive to the changes and disturbances that will impact their trees.

2.3. Benefits of Urban Trees

2.3.1 Energy Savings

One of the more important economic benefits that urban trees provide to urban centres is reducing the costs of heating and cooling homes and businesses. With urban areas typically being heat islands, due to dark coloured surfaces absorbing heat, they tend to have high temperatures compared to their surroundings (Galvin 1999). Trees help reduce the cost of cooling through shade coverage. Pandit & Laband (2010) found that a shade increase of 10% throughout the day reduced electricity use by approximately 1.6 kWh/day. While the empirical evidence shows that trees reduce energy costs, many businesses and homes do not want to be in full shade due to the tree blocking their building (Laband & Sophocleus 2009).

2.3.2. Storm Water Mitigation

Due to the nature of urban centres, stormwater management and mitigation is an important service that urban trees provide. Urban centres have many impermeable surfaces that causes runoff instead of infiltration (Brack 2002). Urban trees help intercept rainfall, absorb and transpire rainfall, reduce pollutants from entering water systems, and reduce erosion (Livesley et al 2016). This can help relieve pressure on an urban centre's water treatment system and can help save money for urban centres and households with the reduced amount of water entering the system from trees (Brack 2002).

2.3.3. Air Pollution

Trees have a profound impact on air quality in several forms. Trees can remove several pollutants from the atmosphere through the absorption of pollutants by the

foliage of the trees (Dwyer et al 1992). There are many chemicals that constitute air pollution, such as nitric oxides, sulphur oxides, particulate matter, volatile compounds, carbon monoxide and ozone (Dwyer et al 1992). These chemicals are created through anthropogenic, polluting activities and can be overwhelming in areas that have poor vegetative cover. Trees absorb these pollutants that attach to the surfaces of the tree, particularly leaves, and incorporates the chemicals into the intercellular space of the tree. Reducing these pollutants can help reduce the effects of climate change by reducing the temperature that some of the pollutants indirectly produce and clean and purify the air as well (Dwyer et al 1992).

2.3.4. Carbon Sequestration/Storage

Carbon dioxide is a major pollutant and the number one contributing factor to global climate change (Nowak 1993). With carbon dioxide considered a greenhouse gas, these gasses are increasingly being released in urban areas due to the density of humans and anthropogenic activity being centralized. This has led global temperatures worldwide to increase and has caused more intense heat to occur in the summer (Livesley et al 2016). This heat puts a strain on all organisms.

A tree's photosynthesis process requires water and carbon dioxide as its primary process to produce energy, with the by-product oxygen. This process removes and stores carbon in the tree and is known as carbon sequestration and storage (Nowak 1993). Carbon sequestration helps mitigate climate change by storing atmospheric carbon in and becoming a carbon sink. The larger (typically older) the tree is, the larger its ability to capture carbon dioxide (Brack 2002).

2.4. Ash Trees – *Fraxinus*

Ash (*Fraxinus*) contains sixteen native species to North America, with four species native to Canada: green, black, white, and blue ash (Farrar 1995). There are many different species of ash throughout the world. E.g., Manchurian ash, an ash found in Asia, has been introduced to urban settings in North America and has some resistance to emerald ash borer (Herms et al 2015). Ash trees are deciduous and have pinnately compound leaves in opposite pairs. Ash seeds are formed in clusters with a wing to aid in their dispersal to reproduce and also can reproduce vegetatively from sprouts (Farrar 1995). Ash tree varieties are common in southern Manitoba communities because they were heavily planted on urban streets after Dutch elm disease was introduced to the prairies (McGuckin 2019). The native species found in Manitou are the Green Ash (*Fraxinus pensylvanica*) and the Black Ash (*Fraxinus nigra*).

2.5. Emerald Ash Borer

The Emerald Ash Borer (EAB) is an invasive beetle that is native to Asia. It is a small, metallic, green beetle which feeds on the phloem of living ash trees. It was first discovered sometime in 2002 in the Detroit-Waterloo area (Vannatta et al 2012), but was suspected to have arrived early in the late 90's from wood packaging materials (Poland & McCullough 2006). The beetle has virtually caused 100% mortality in all types of native ash (*Fraxinus spp.*) trees (Sadof et al 2011) in North America. The beetle has spread drastically across the continent, with the insect being detected as far west, in Canada, as Winnipeg (McKenney et al 2012). EAB kills its host trees by creating galleries underneath the bark, which girdles the tree and deprives the tree of water and nutrients.

EAB becomes prevalent in mid to late May as they emerge, when they will feed on ash foliage for five to seven days before mating (Anulewicz et al 2008). Once mating has occurred it is another five to seven days before females begin oviposition (Anulewicz et al 2008), where they will lay eggs in July or August that will hatch in approximately 2 weeks. Adult beetles will live between three to six weeks, with peak adult beetle activity occurring between late June to early July (Anulewicz et al 2008). During this time larvae feed on phloem in the outer sapwood for several weeks. Larvae will overwinter as early instars and complete their feeding in the second summer (Anulewicz et al 2008) in some parts of North America. The larvae will pupate in late April/early May and adults emerge roughly two weeks later, leaving D-shaped exit holes, measuring 3 – 4 mm in diameter. In cooler parts of the continent, such as Manitoba, it is believed that this cycle requires an additional year.

The beetle has already started to have ramifications for local municipalities' budgets for urban forestry. Analysis has been done on 4 midwest American states on the effects of the beetle, with landscape value lost from the beetle being approximated at \$7.7 - \$15 billion (Sydnor 2011) due to the loss of ash trees from streets. In these same 4 states removal costs were also estimated between \$718 - \$838 million (Sydnor 2011). Over time, municipalities that have EAB present will have to increase their budgets due to the costs of contractors, hydro companies and their operating costs (Hauer 2017).

2.6. Pesticides Used for Treatment

2.6.1 TreeAzin

TreeAzin is a systemic insecticide that is used to treat ash trees, to kill the emerald ash borer larvae that feeds on the cambium of ash trees. The insecticide is injected underneath the bark into the cambium of the trees, which is distributed by the tree's internal systems throughout the tree (Bioforest 2018). TreeAzin will also affect the adult beetles that feed on foliage, where female beetles that eat TreeAzin infused foliage will have a reduced number of viable eggs (Bioforest 2018). Treated trees that have been treated with TreeAzin have shown larval death rates of 95%. The frequency and length of the galleries that larvae create are also shown to be smaller (Bioforest 2018).

2.6.2. Emamectin Benzoate

Emamectin benzoate is a systemic insecticide that is used to treat ash trees. It is injected directly into the base of the tree trunk and is transported throughout the whole tree. The insecticide is derived from a naturally occurring soil bacterium (Hahn et al 2011). The insecticide has been shown to be a highly effective control for two to three years of protection and has a greater period of protection than TreeAzin (Herms et al 2019). Emamectin benzoate has been shown to affect a broad range of plant-feeding insects and that beneficial, predatory insects can be killed through indirect exposure to the insecticide (Hahn et al 2011).

3.0 Methods and Materials

3.1 Materials Used for Data Collection

3.1.1 Research Area

The community of Manitou, Manitoba (49.2404° N, 98.5385° W) was the chosen community to conduct the tree inventory. The community lies 160 km southwest of Winnipeg, next to the Pembina Valley, and has a population of 840 residents. The community has an aging population and acts as a hub to the rural, farming community in the region. In a partnership between Manitoba Agriculture and Resource Development's Forestry Branch, Pembina Valley Watershed District (formerly Conservation District) and the Municipality of Pembina, the Manitou Tree Inventory was conducted between July 10th and August 20th, 2019. Due to time constraints and a lack of clarity during the data collection, not all the trees in the community were collected. The collected total of trees was approximately 85-90% of the total population of the urban trees on public property in Manitou.

3.1.2 Trees Within the Research Area

Within Manitou, 1,538 trees were inventoried with a wide range of tree species being inventoried. Ages of the trees ranged from 5 to 70+ years old. Most of the species in the inventory are: green ash (*Fraxinus pennsylvanica*), black ash (*Fraxinus nigra*), American elm (*Ulmus americana*), and Siberian elm (*Ulmus pumila*). Other notable genera in the community are maples (*Acer spp.*), oaks (*Quercus spp.*), poplars (*Populus spp.*) and spruce (*Picea spp.*). Less notable genera that were found were lindens (*Tilia spp.*), hackberry (*Celtis occidentalis*), pine (*Pinus spp.*) and apples (*Malus spp.*). Trees that were inventoried were all located within the municipal limits of Manitou and ranged

in spacing and location. Most trees that were inventoried were located along streets, but there were also several trees located in parks, shelterbelts, and hardscapes. Spacing between trees located on streets varied. This is because newer developments in the community had different tree spacings from older parts of the community. Trees generally were healthy and had no deformities, but some trees had poor pruning, dieback in crowns, deformities in branches or trunk, and any other abnormalities that were noted.

3.1.3 Tools Used to Collect Data

To conduct data collection, several tools were required. To measure tree diameters, diameter tapes were used primarily, but tree calipers were also used. The calipers were typically used when there was excessive, lower branching on trees (typically spruce) which made it very difficult to measure with a diameter tape. To measure tree heights, a Suunto clinometer was used. Depending on the spacing of the trees to the streets, both sides of the clinometer were used (15m and 20m spacing from tree) to determine tree height. To determine tree GPS location a Samsung Galaxy S6 GPS was used primarily and an Arrow 100 Submeter GNSS receiver. To input data collected from individual trees, a mobile phone app, Survey123, was used to input data from the field to an online database on ArcGIS online.

3.1.4 Software Used for Data Collection

ArcGIS online was used as the database to store the data on the community's trees. In partnership with the Province of Manitoba Forestry Branch, a base map was set-up for data collection to be used specifically by data collectors at Pembina Valley

Conservation District. Formatting of the inputted data was also done by the Forestry Branch.

3.1.5 Accuracy of the Data

Accuracy of the inventory was decreased as of October 11th/12th, 2019, due to the Thanksgiving weekend storm that hit southern Manitoba. Due to the severity of the storm, many trees suffered broken branches and limb loss. In some cases, trees were damaged so severely that they had to be removed. An assessment of the storm's damage to the trees has not been conducted and data has not been updated since then. The data used in this thesis will be from database existing on August 20th, 2019.

3.2. Methods Used

3.2.1 Data Collection

In collecting data for the Manitou Tree Inventory, Pembina Valley Watershed District partnered with the Manitoba's Forestry Branch, within the Department of Agriculture and Resource Development. In following with Manitoba Forestry Branch's protocol for conducting tree inventories in rural communities, Pembina Valley Watershed District followed the data collection and storage process.

Manitoba Forestry Branch set-up an ArcGIS online tree inventory database for the purpose of inputting data online for easy access to collected data and display a map of the collected trees in the community of Manitou. To input data into ArcGIS online an app. was used in the collection process called Survey123. Survey123 provides a datasheet form to fill in of individual trees for the inventory. The datasheet in the app. had several fields for trees that could be filled in: GPS location, tree location (boulevard,

park, etc.), private or public tree, tree species, diameter at breast height, tree height, comments about anything regarding abnormalities about the tree, tree civic address, and whether the tree is multi-stemmed or not. Collected data would then be transferred from the Survey123 app. to the ArcGIS online database and input into the Manitou Tree Inventory.

3.2.2 Data Analysis

In calculating tree values, several applications were used to analyze the data from the Manitou Tree Inventory. The first one is the application i-Tree. i-Tree was used to quantify urban forest structure and the ecological/economic benefits the trees provide. By running the data through i-Tree and analyzing the collected data, we can start drafting a tree enhancement plan for the community. The other calculators used were: the Urban Tree Alliance EAB Cost Calculator and National Tree Benefits Calculator (NTBC). The EAB Cost Calculator works by calculating the costs and values of an ash tree by using an individual ash tree's diameter (Sadof et al 2011). From there the Calculator determines the estimated annual benefits provided by the tree, estimated treatment cost (single treatment over 2-3 years), the estimated removal cost and years until treatment costs reach removal cost (this is based off a single treatment every 2 years). The NTBC analyzes all the ash trees' ecological benefits provided to the community, such as stormwater mitigation, electricity savings, etc. Given the data analyzed specifically for ash trees, an analysis of the potential effects of an EAB invasion in the community can be factored into drafting a tree enhancement plan for the community.

3.3. Calculators

3.3.1. iTree eco v6

iTree eco v6 is a highly detailed model, that operates on several parameters to output benefits and values from inputted tree inventories. The inputs used for the Manitou inventory were: DBH, tree height, species, and land use type. These inputs are merged with local pre-processed hourly weather and air pollution concentration data. This merging makes it possible for the model to calculate structural and functional information using a set of scientific equations and algorithms. With the study location being outside of the USA, weather and pollution reports from 2010 had to be used due to the limitations of the software being used. This can lead to precipitation values that are less accurate and affect pollution removal and hydrological estimates. The accuracy of the model also increases with more inputs than just species and DBH. Additional measurements (such as crown size, health and light exposure) can help increase the accuracy. Eco v6 uses regression equations to estimate missing tree measurements, but this decreases the accuracy of the results. In this case, tree health had to be generalized for the whole inventory, with all the trees in the inventory receiving a rating of 80%.

To calculate pollution removal estimates, hourly tree-canopy resistances for ozone, sulfur and nitrogen dioxide are based off of hybrid big-leaf and multi-layer canopy deposition models. To calculate values of pollution removal, a default air pollution removal value is calculated based on local incidence of adverse health effects and national median externality costs. For the analysis in this thesis, the pollution removal value was calculated based on the following prices: Can\$ 1,486 per metric ton (carbon monoxide), Can\$ 1,289 per metric ton (ozone), Can\$ 192 per metric ton

(nitrogen dioxide), Can\$ 70 per metric ton (sulfur dioxide), and Can\$ 44,867 per metric ton (particulate matter less than 2.5 microns). For calculating carbon storage and sequestration, carbon storage was estimated by taking tree dry-weight biomass and converting it to stored carbon by multiplying by 0.5 and carbon sequestration was estimated by the average diameter growth from the appropriate genera. For the analysis in this thesis, carbon storage and carbon sequestration values were calculated based on a price of Can\$ 115 per metric ton.

For avoided runoff, estimates were calculated based on rainfall interception by vegetation, specifically the difference between annual runoff with and without vegetation. For analysis in this thesis, the avoided runoff value was calculated based on the price of \$ 2.32 per m³.

Finally, structural value of the inventory was based on valuation procedures of the Council of Tree and Landscape Appraisers, which uses tree species, diameter, condition and local information.

3.3.2. National Tree Benefits Calculator

The National Tree Benefits Calculator (NTBC) was developed by Casey Trees and Davey Tree Expert Co., from the iTree Streets application. NTBC uses inputs of location (climate zone), species, tree size (DBH) and land use type to estimate the environmental and economic value trees provide on an annual basis. The NTBC estimates values on an individual tree basis and calculates the following: property value, avoided runoff, air pollution removal, carbon sequestration, natural gas savings and

electricity savings with corresponding dollar amounts. Due to the NTBC operating on an individual tree basis, only ash species (black and green) were used in the calculator. The ash was separated into different DBH classes to have a basic understanding of the values that ash provide to the community.

3.3.3. Urban Tree Alliance EAB Cost Calculator

The Urban Tree Alliance cost calculator is very similar to the NTBC but it operates on more basic calculations. The calculator requires an input of an individual tree's diameter and calculates the different outputs using solely the diameter. The calculator is exclusively used for ash trees. Outputs are: estimated treatment cost, estimated removal cost, years until treatment costs reach removal cost, and estimated annual benefits provided by the tree. The calculations for estimated annual benefits are derived from the NTBC's model and combines the values of property value, carbon storage, carbon sequestration, stormwater interception, air pollution removal, and reduced heating/cooling costs into one value. The EAB cost calculator notes that these estimates are approximate and that the costs associated to some of the outputs are dependent on other variables that are not accounted for in the calculations, such as in estimated removal cost, tree condition, accessibility and other obstacles can greatly influence the cost of tree removal.

4.0 Results

With analysis of the data completed using three different calculators, Tables and Figures were produced which compare the values from the different calculators. The Figures and Tables displayed are divided by the different calculators used. The iTree model calculates the data on the complete tree inventory and reviews the ecological benefits, while the NTBC and Urban Tree Alliance calculators were specifically utilized to review ash's ecological benefits. In the final section, all the calculators are presented to display their differences.

4.1. Results from the Inventory

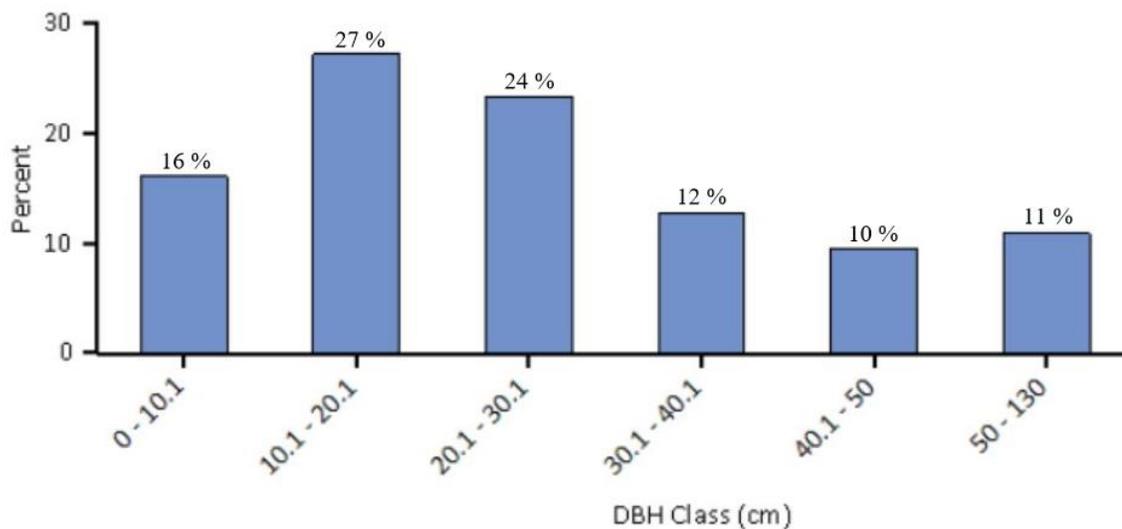


Figure 1. Diameter class distribution of all 1,538 trees by percentage of the population

Figure 1 shows that the majority of trees are within the 10.1 – 20.1 cm diameter class, with almost 30% of the total tree population in this diameter class. The diameter class representing the fewest number of trees was the 40.1 – 50 cm class, with 10% of the total tree population. The average DBH was 26.1 cm. The majority of the trees in

Manitou have a smaller DBH meaning that most of the population is composed of younger trees.

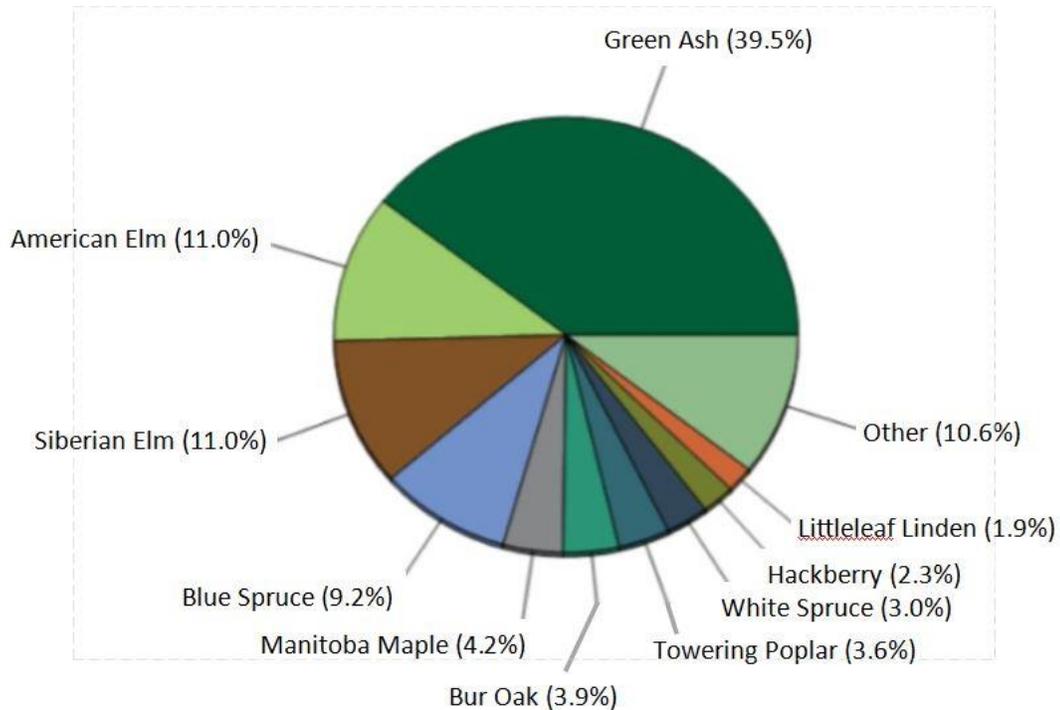


Figure 2. Species classes of total inventory represented by percent of total population

Figure 2 shows that the most common tree found in the inventory was green ash (*Fraxinus pennsylvanica*), which had a total of 39.5% of the total population (606 trees). American (*Ulmus americana*) and Siberian (*Ulmus pumila*) elm trees each accounted for 11.0% of the total population (169 trees each) while Colorado blue spruce (*Picea pungens*) accounted for 9.2% of the total population (141 trees) and boxelder (Manitoba maple) (*Acer negundo*) accounted for 4.2% of the total population (66 trees).

4.2 Results from iTree Calculator

Table 1 displays the annual benefits (in dollars) of the iTree Eco v6 in Canadian dollars for all the trees.

Table 1. Annual ecological benefits (\$) of all trees from the iTree Eco v6 model.

	Number of Trees	Carbon Storage (Can\$)	Gross Carbon Sequestration (Can\$/yr)	Avoided Runoff (Can\$/yr)	Pollution Removal (Can\$/yr)	Sum of Benefits (\$)*	Benefits amount per tree (\$/tree)	Total Structural Value (Can\$)
Total	1,538	41,241.29	631.58	994.69	468.31	43,335.9	28.18	2,078,805.69
Mean	1,538	26.81	0.41	0.65	0.30	43336	28.18	1,351.63

*Carbon storage, gross carbon sequestration, avoided runoff and pollution removal benefits added together.

The benefits were initially calculated in USD but were converted to Canadian dollars using the exchange rate from January 31, 2020. The exchange rate was 1 US\$ = \$1.32356 Can\$. While the average benefits per tree was \$28.18/per tree this number is slightly inflated since the majority of the tree population is younger. The benefits per tree is greater due to older, larger trees that provide a greater amount of benefits.

Table 2 displays the annual ecological benefits of all the trees from the Manitou tree inventory expressed in the form of their gross metric measurements.

Table 2. Annual ecological benefits (gross metric measurements) of all trees from the iTree Eco v6 model.

	Number of Trees	Carbon Storage (metric ton)	Gross Carbon Sequestration (metric ton/yr)	Avoided Runoff (m ³ /yr)	Pollution Removal (metric ton/yr)
Total	1,538	359.03	5.5	427.88	0.18

Table 3. Annual ecological benefits (\$) of all green ash from the iTree Eco v6 model.

	Number of Trees	Carbon Storage (Can\$)	Gross Carbon Sequestration (Can\$/yr)	Avoided Runoff (Can\$/yr)	Pollution Removal (Can\$/yr)	Sum of Benefits (\$) *	Benefits amount per tree (\$/tree)	Total Structural Value (Can\$)
Total	607	9,635.21	164.19	340.95	160.52	10,301	16.97	697,962.16

*Carbon storage, gross carbon sequestration, avoided runoff and pollution removal benefits added together.

Table 3 depicts the dollar amount of the different ecological benefits that green ash provide to the community. Green ash has the highest pollution removal and avoided runoff benefits of all the species in the inventory. Green ash also had the highest structural value of all the species as well.

Table 4. Annual ecological benefits (\$) of all black ash from the iTree Eco v6 model.

	Number of Trees	Carbon Storage (Can\$)	Gross Carbon Sequestration (Can\$/yr)	Avoided Runoff (Can\$/yr)	Pollution Removal (Can\$/yr)	Sum of Benefits (\$)	Benefits amount per tree (\$/tree)	Total Structural Value (Can\$)
Total	20	341.76	6.66	8.58	4.04	361	18.05	17,296.94

*Carbon storage, gross carbon sequestration, avoided runoff and pollution removal benefits added together.

Table 4 depicts the dollar amount of all the different ecological benefits that black ash provides to the community. Black ash does not have nearly the same number of trees as green ash, but provides a higher ecological benefits per tree than green ash.

4.3 Results from National Tree Benefits Calculator

Table 5. Annual ecological benefits (\$) dollar amounts for all green ash from the NTBC®.

DBH Class Average	Number of trees in DBH class	Property Value (\$)	Stormwater (\$)	Electricity (\$)	Natural Gas (\$)	Air Quality (\$)	CO2(\$)	Total per tree (\$)	Total all trees in DBH class (\$)
6.85	62	9.79	2.15	1.00	1.72	0.40	0.39	15.45	957.90
15.73	213	21.58	9.12	4.08	7.33	1.67	1.59	45.37	9,663.81
24.35	178	32.74	18.80	8.24	14.75	3.43	3.05	81.01	14,419.78
34.29	72	44.90	33.91	15.13	23.2	6.30	5.27	128.71	9,267.12
44.87	54	55.33	53.44	18.78	31.35	8.27	6.93	174.1	9,401.40
56.29	27	64.08	77.54	20.98	39.06	9.95	8.32	219.93	5,938.11

Table 5 depicts the NTBC calculations for all the green ash in the Manitou tree inventory. Compared to the iTree Eco v6 model, the NTB calculator derives higher ecological benefits from the trees than iTree and the incorporation of more benefits in the model, specifically property value. All the monetary values are in Can\$ and were converted from US\$ using the exchange rate from January 31, 2020.

Table 6. Annual ecological benefits (\$) dollar amounts for all black ash from the NTBC®.

DBH Class Average	Number of trees in DBH class	Property Value (\$)	Stormwater (\$)	Electricity (\$)	Natural Gas (\$)	Air Quality (\$)	CO2(\$)	Total per tree (\$)	Total all trees in DBH class (\$)
8.45	2	9.54	2.78	1.88	3.95	0.79	0.75	19.69	39.38
16.10	13	19.70	9.00	4.93	10.25	2.15	1.89	47.92	622.96
27.43	3	32.55	22.57	10.93	20.23	4.91	3.77	94.96	284.88
-	-	-	-	-	-	-	-	-	-
48.30	1	45.14	57.52	19.23	35.48	9.75	6.24	173.36	173.36
68.60	1	34.01	102.01	24.37	46.47	14.28	6.26	227.4	227.40

Table 6 depicts the NTBC dollar amounts for all the black ash in the Manitou tree inventory. While the population of black ash is significantly less than green ash, the benefits from black ash are marginally greater than green ash. This is because black and green ash having similar species conditions. There was no black ash in DBH class 30.1 – 40 cm.

4.4. Results from Urban Tree Alliance EAB Cost Calculator

Table 7. Costs and benefits per each DBH class of green ash from the Urban Tree Alliance EAB Management Cost Calculator.

Tree DBH class average	Estimated Annual Benefits per tree (US\$)	Estimated treatment cost (US\$)	Estimated removal cost (US\$)	Years until treatment costs reach removal costs
7	30	30	56	4
16	59	60	164	5
24	89	90	306	6
34	129	130	538	8
45	178	180	889	9
56	218	220	1,210	10

Table 7 displays the benefits and costs of the green ash from the Manitou tree inventory using the EAB management calculator from Urban Tree Alliance. The annual ecological benefits per tree from the Urban Tree Alliance calculations are greater than the annual benefits from the iTree or NTBC models.

Table 8. Costs and benefits per each DBH class of black ash from the Urban Tree Alliance EAB Management Cost Calculator.

Tree DBH average	Estimated Annual Benefits per tree (US\$)	Estimated treatment cost (US\$)	Estimated removal cost (US\$)	Years until treatment costs reach removal costs
8	30	30	56	4
16	59	60	164	5
27	109	110	416	7
-	-	-	-	-
48	188	190	966	10
69	267	270	1,659	12

Table 8 displays the benefits and costs of the black ash from the Manitou tree inventory using the EAB management calculator from Urban Tree Alliance. The annual ecological benefits for the black ash are the same as the green ash from the same calculator.

Table 9. Costs (in Can\$) of black and green ash per each DBH class from the Urban Tree Alliance EAB Management Cost Calculator.

Tree DBH class average	Number of ash trees in DBH class average	Estimated treatment cost (\$)	Estimated removal cost (\$)	Total estimated treatment cost yearly (\$)	Total estimated removal cost (\$)
7 - 8	64	39.60	73.92	2534.40	4,730.88
16	226	79.20	216.48	17,899.20	48,924.48
24	178	118.80	403.92	21,146.40	71,897.76
27	3	145.20	549.12	435.60	1,647.36
34	72	171.60	710.16	12,355.20	51,131.52
45	54	237.60	1,173.48	12,830.40	63,367.92
48	1	250.80	1,275.12	250.80	1,275.12
56	27	290.40	1,597.20	7,840.80	43,124.40
69	1	356.40	2,189.88	356.40	2,189.88

Table 9 depicts the Urban Tree Alliance's EAB Management Cost Calculator analysis of Manitou's green and black ash combined in the DBH class average categories. The only categories where black and green ash are present together is DBH class average 7 – 8, and 16. All the benefits and costs have been converted to Can\$ from US\$ using the exchange rate from January 31, 2020. While treatment costs increase with DBH, so does removal costs but removal costs increase at a much greater rate.

4.5 Comparison of All Calculators

Table 10. Comparison of the different calculators' annual ecological benefits (\$) for all ash trees.

	iTree annual benefits from ash (\$)	NTBC annual benefits from ash (\$)	Urban Alliance Tree EAB Calculator annual benefits (\$)
All ash trees	43,696.91	50,996.10	56,664

Table 10 displays the ecological benefits of the three calculators. The Urban Tree Alliance calculator produces the highest amount of annual benefits, the NTBC annual benefits produces the second highest amount of annual benefits, while the iTree model produces the lowest amount of annual benefits.

5.0 Discussion

With the data analysis complete and the results compiled, a strategic and tactical management plan can be developed for Manitou's trees.

The strategic management plan will be designed for a 10-year period, with objectives and activities that will be implemented within the time period to help Manitou have its urban forest reach a "desirable" state.

The tactical management plan will be designed for a 1-year period, highlighted by activities that will be implemented within the time period to help achieve the objectives within the strategic management plan.

All the data used for the management plans have some assumptions based on the different calculators used, since these calculators assume some of the tree inventory characteristics. These characteristics are land use type, tree health rating, and weather/climatic conditions associated to tree growth rates. These characteristics have an impact on the results, along with different monetary conversion rates for ecological annual benefits from the different calculators.

The village of Manitou is likely to lose money through tree value and benefits, no matter what type of action is undertaken due to potential invasion of EAB. With the EAB invasion imminent, iTree estimates that there will be \$715,000 lost from ash structural value and that removal costs, estimated by Urban Tree Alliance, will cost Manitou \$288,000 for all ash trees to be removed completely. To prevent as much monetary loss as possible while maintaining a financially viable action plan for the community, a strategic management plan needs to be developed to help protect

Manitou's urban forest for the long-term future. The strategic plan will set out objectives and indicators that will minimize the value lost over a ten-year period. In addition to developing a strategic management plan for the Manitou urban trees, a template for a tactical management plan needs to be developed. The tactical management plan needs to highlight the actions that have to be undertaken in a year that follow the objectives and indicators of the strategic plan.

5.1. Strategic Management Plan

5.1.1 Treating Ash Trees

The main priority for the strategic management plan is to minimize value lost from the potential EAB invasion and from the excessive planting of monocultures in the Manitou. With Manitou potentially losing \$715,000 from the structural value of all ash trees, the strategic management plan needs to prepare a removal and replacement plan for all the ash in Manitou. Treating all the trees would be excessively expensive: approximately costing \$75,649.2 annually to treat all the ash trees. Removing all the trees without replacements would cost Manitou \$43,696.91 - \$56,664 on annual benefits. A cost-effective compromise between treatment and replacement needs to be met. Treating ash that provide the greatest amount of benefits and removing ash that do not provide great monetary benefits for the community is key for this plan to work. To determine which ash trees are to be treated and which ones will be removed, DBH classes will be used as the determinant. DBH classes 0 – 10 cm, 10 – 20 cm and 20 – 30 cm will be removed. DBH classes 30 – 40 cm, 40 – 50 cm and 50+ cm will be treated

for EAB. Exceptions to the DBH classes that are to be treated is based on health, as a tree between a 30 – 50+ cm DBH that exhibits a less than average health rating will be removed and replaced instead of being treated. Likewise, any trees in the 20 – 30 cm DBH class that exhibits an excellent health rating and produces high annual benefits will be treated instead of being removed and replaced. Another exception can be given to trees in the 20 – 30 cm class if these ash occur in an area where there is a heavy presence of ash in the 20 – 30 cm class but very little of other species. Keeping some of these ash and treating them will be needed to ensure parts of Manitou do not lose all their urban trees due to the removal and replacement strategy. By keeping all ash trees that are above 30 cm DBH we can slowly cut down the ash population in Manitou to 10% of the urban tree population. This will help us achieve our next objective, achieving Santamour's 10% rule (Santamour 1999).

5.1.2. Removing and Replacing Ash Trees

While minimizing value lost from the ash population in Manitou is the top priority, there needs to be a guiding principle/objective for the strategic management plan. Santamour's 10% rule (Santamour 1999) will be the guiding principle for the long-term direction of Manitou's urban forest, as the 10% rule was initially developed as a reaction to insect outbreaks that threatened to wipe out complete urban tree populations. With such a heavy presence of ash planted in Manitou along with American and Siberian elm in Manitou, using the 10% rule to guide future management decisions, the worry of massive disease and insect outbreaks that could ravage the urban tree population would not have as dire consequences in the future. This is not just a problem

in Manitou but is a wide-ranging problem throughout southern Manitoba as seen in Table 11.

Table 11. Number of small, medium, and large ash trees per kilometer of urban road for 16 communities in western Canada (McKenney et al 2012).

Urban Area	Province	Ash trees per km of urban road		
		<5 m tall	5-10 m tall	>10 m tall
Manitou	Manitoba	0.1	36.3	38.0
Treherne	Manitoba	11.1	31.2	46.6
Altona	Manitoba	10.6	35.6	51.2
Beausejour	Manitoba	6.3	8.7	16.1
Carberry	Manitoba	6.7	22.3	36.5
Carman	Manitoba	21.6	19.3	49.2
Dauphin	Manitoba	2.6	13.6	18.4
Deloraine	Manitoba	26.4	30.7	66.8
Rivers	Manitoba	8.8	4.2	16.6
Selkirk	Manitoba	3.9	10.0	15.1
Souris	Manitoba	11.5	27.7	44.7
Steinbach	Manitoba	9.5	24.3	39.8
Stonewall	Manitoba	7.6	7.7	16.3
Virden	Manitoba	9.0	11.2	23.0
Winkler	Manitoba	23.0	48.7	79.6
Portage La Prairie	Manitoba	2.8	13.6	19.0
<i>Average*</i>		8.7	20.2	32.9

*Average is weighted by population size of urban areas.

Manitou, compared to other communities such as Winkler and Deloraine, is in a much better situation due to these other communities having an incredibly high density of ash in their communities, making them highly susceptible to an EAB invasion or any other disease/insect outbreak that can greatly affect ash. Implementing the 10% rule would cut

down on the planting of monocultures in Manitou and these communities, preventing them from being at risk from disease/insect outbreaks.

5.1.3. Tree Maintenance

In addition to the 10% rule, the strategic management plan needs a proper tree maintenance and monitoring program implemented to protect all the urban trees. Manitou does a good job pruning their spruce trees; but the town does not do as good of a job pruning hardwood trees, particularly ash and elm trees. A cyclic pruning schedule needs to be established to keep all trees in excellent health. Cyclic pruning (Davey Resource Group 2011) can reduce long-term tree costs; such more extensive pruning and even removal of trees and can even boost the monetary benefits derived from urban trees. In addition to increased benefits and lower long-term costs, scheduled cyclic pruning can also enhance public safety, reduce storm damage, and create more aesthetically pleasing trees. In addition to cyclic pruning, a monitoring program specifically designed to monitor the ash needs to be implemented. Monitoring will be conducted using prism/pheromone traps (Davey Resource Group 2011). These traps have been proven to effectively detect EAB before signs/symptoms show up in a tree. With ash being planted throughout Manitou, traps should be systematically placed throughout the community wherever ash are present to help detect the insect before it attacks the ash.

5.1.4. Tree Diversification

With the implementation of the 10% rule being the guiding principle, the last step of the strategic management plan is to increase the diversity of the urban tree

population. With monocultures dominating urban forestry in southern Manitoba, municipalities need to move away from this old fashioned way of thinking of urban forestry. Replacement trees should be used to boost diversity without planting another series of monocultures in the community. Presently, Manitou is using bur oak and hackberry as their primary replacement trees, but this can lead to more problems, as green ash was originally used as the replacement tree for the American elm decades ago in southern Manitoba. Using native and naturally disease resistant species trees should be considered when replacing trees. Table 12 shows the different replacement trees that Manitou can use, based on their abilities to resist disease/insects. Species rating is based on the Alberta Tree Species Rating Guide (Regional Plant Appraisal Committee for Alberta 2003) natural to the area.

Table 12. Replacement trees based on their species rating.

Species	Species rating %
Tartarian maple	80
Tamarack	100
Assiniboine poplar	80
Northern pin oak	100
Showy mountain ash	80
Silver maple	100
Prairie sky poplar	70
Bur oak	100
Hackberry	60
Ohio buckeye	100
Siberian crabapple	80
Scots pine	100
Paper birch	80
Freeman maple	100*

*Species rating based off of silver maple rating

These species would offer diversity to Manitou without compromising aspects of urban development, such as roots damaging concrete and pipes. These species have relatively high species ratings and most of these species have a long lifespan. Some of these trees are more suited to a park setting instead of a boulevard, such as the Siberian crabapple (*Malus baccata*). With climate change likely influencing tree ranges in the near future, trees that previously did not have range in southern Manitoba may have suitable growing conditions, such as red oak, red maple and large tooth aspen. These species could also be considered replacement trees as they would boost the diversity within the community.

5.2. Tactical Management Plan

5.2.1. Monitoring For EAB

Addressing the ash in Manitou is the top priority in the tactical management plan. With the tactical plan highlighting the yearly operations/activities regarding the urban tree population, the activities regarding the ash will need to be prioritized. Around late May, monitoring activities will need to begin. Early detection of EAB will allow Manitou to quickly move to protect trees and address the outbreak. Traps will need to be set up throughout Manitou in areas that have a heavy presence of ash planted and this can be set up in a grid-like pattern to have an even spread of traps. Traps need to be checked at regular intervals until mid August when the insect's activity diminishes. In addition to trap sampling, visual monitoring of trees can be used to see if ash tree health

deteriorates. If a tree is suspect of diminishing health or the presence of EAB, branch sampling can be used to check if EAB galleries are present.

5.2.2. Tree Removal

The next priority to address is the removal and replacement of ash in Manitou. A yearly analysis will need to take place to determine how many ash should be removed as well where in the community ash trees should be removed. In this case, ash that provide the lowest amount of benefits to the community will be removed first, with DBH typically being correlated to annual benefits of a tree. A more in-depth analysis of the community could be used to determine which ash should stay longer or shorter depending upon the trees' age, location, benefits, and public interests. For this tactical plan ash trees in the 0 – 10 cm DBH class will be the first trees to be removed and replaced. Figure 3 displays where the 0-10 cm trees are located in Manitou.



Figure 3. Locations of ash in the DBH class 0 – 10 cm.

With removal costs estimated at \$4730.88 (Urban Tree Alliance) for 64 young ash trees this could be reasonable if replacement costs do not inflate grossly making removal and replacement no longer cost-effective. Removal should occur during the dormancy period, preferably during the winter and early spring to limit any other problems that can occur during the removal of a tree. Replacement of the removed trees can occur during the spring or the fall, allowing the replacement tree to establish itself when climatic conditions are not stressful, unlike the summer where high temperatures will require a higher water requirement for establishing trees. Replacement trees should be watered once/twice weekly until dormancy starts setting in for the season. Once a

replacement tree is established it should be included into the ArcGIS tree inventory database for future management considerations.

5.2.3. Treating Ash

The next priority for the tactical plan is to develop a schedule for treating ash trees for EAB. This part of the management plan is contingent on the spread of EAB in the province. At the moment, the farthest that EAB has been detected is Winnipeg. Treatment will only begin once a known EAB infestation is within 30 km of Manitou. This follows the guidelines for treating trees and makes the management plan more cost-effective if the beetle is not close to the community.

There are two chemicals that are conventionally used, Treeazin and Emamectin Benzoate. The Urban Tree Alliance EAB calculator uses Emamectin Benzoate for its calculations. While Emamectin Benzoate is highly effective at protecting ash for more than 2 years from EAB it also has been known to be harmful to birds, mammals, fish and other aquatic organisms (Hahn et al 2011), making it less desirable compared to TreeAzin.

Treeazin does not provide the same level of protection compared to Emamectin Benzoate, as it can provide 2 years of protection against EAB but may need to be injected annually if ash density is high. Treeazin is not nearly as harmful to its surrounding ecosystem compared to Emamectin Benzoate, making it suitable for urban areas. Both chemicals have a similar price point. Table 9 (above) shows the yearly expenses for treatment injections. Injections should occur between mid May to late June (BioForest Technologies Inc. N.d.). Ash that provide the greatest benefits to Manitou

will be top priority for treatment. There are 28 ash that have a DBH above 50 cm; these trees will be the top priority for treatment in the tactical plan. In addition to the 28 ash, another 55 ash will be treated in the first year of the plan, as these ash belong to the DBH class 40 – 50 cm. The remaining DBH class 30 – 40 cm of 72 ash will not be treated in the first year of the plan, but will be treated in the second year. For the first year of treatment the cost to protect DBH classes 40 – 50 and 50+ cm will be approximately \$21,000 and for the second year of treatments for DBH class 30 – 40 cm will cost approximately \$13,000. With such a large amount of taxpayer dollars required to treat the trees, removal and replacement is much more cost-effective for a community like Manitou. Therefore, removal and replacement has a higher priority than treating the ash trees. This may mean that treating the DBH class 30 – 40 cm is not cost-effective for Manitou and that this DBH class may have to be in the removal and replacement section of the management plan. If any trees that have been treated, but EAB still persists and grows in the tree, the tree will be slated for removal to limit the growth and spread of EAB in the community.

5.2.4. Tree Maintenance

The last priority to the tactical plan is to continue basic tree enhancement activities that can add value and longevity to urban trees in the community. These activities would include pruning, insecticide injections, tree removal, watering, monitoring/inspecting trees and any other potential tree enhancement activity. By conducting these yearly tree maintenance tasks, Manitou can increase the general value of its community by maintaining and improving its urban trees.

5.3. Flaws with the Calculators

Each of the benefits calculators used works on different algorithms/calculations from each other by producing different outputs on annual contributions/benefits. Property value was an important output from the NTBC calculations which was not outputted from the iTree model. This factor was also included in the Urban Tree Alliance calculator, which ran a similar set of calculations as the NTBC. This gave the Urban Tree Alliance calculator the highest annual benefits of the inventory out of the three calculators used. This is most likely due to it being an approximate generalization of the trees due to it only requiring a measurement of the tree's DBH, making the calculator flawed due to its generalizations. NTBC needed location/grow zone, tree species, DBH and land use type. While this is more specific than the Urban Tree Alliance calculator, it still generalizes the trees, such as their distance to a building and health, making this calculator flawed as well.

The iTree model was the most accurate and reliable model used out of all the calculators. It was designed for large inventories, unlike the NTBC and Urban Tree Alliance calculators which were designed for individual trees. The iTree model incorporated many parameters into its calculations, which included DBH, tree species, land use type, and total height. The model is most accurate since it considers weather and pollution reports from 2010 to optimize the model's output. iTree is part of a suite of programs designed by the USDA Forest Service in cooperation with many other reputable companies. The software is used by professionals across North America to determine the value and annual contributions of trees. Considering all of these factors the iTree eco v6 model is most accurate.

6.0 Conclusion

Manitou can not afford to take no action for the future of their urban trees. The imminent invasion of EAB threatens massive losses to the community, with the potential loss of all black and green ash. Treatment will only be needed when EAB is detected within 30 km of Manitou, but this does not mean that it should be disregarded. Treatment can be a valuable tool to help minimize potential value lost if EAB is within “striking distance” of the community. While complete treatment of all the ash trees is not feasible with the tax base of the community, providing treatment to some of the higher value ash trees should be considered for the community to prevent complete loss of ash and minimize value lost from EAB. At this stage, Manitou should begin monitoring for EAB with trapping and visual surveys and start replacing lower valued ash trees with replacement trees that can boost the diversity, composition and structure of the Manitou urban tree population. In addition to replacement trees, the town can also begin to plant new trees in parks and other greenspaces, so that when losses begin, the town’s overall canopy will not be destroyed all at once. This action can begin long term planning for the community and mitigate value lost in the short term. The strategies of monitoring, replacement of lesser valued trees, new tree planting, then eventually treating the older/more valuable ash will maximize the economic gains and minimize the losses.

Communities throughout southern Manitoba need to take a stronger stance on the protection and management of their urban trees. For years, the planting of monocultures has dominated these communities in phases, with the overplanting of American elm followed by green ash. The main reason for the switch from elm to ash

was due to Dutch elm disease. Currently there is another shift from the ash monoculture, with EAB forcing managers to plant a different replacement tree. While Manitou has taken efforts to start moving away from monoculture planting by using hackberry and bur oak as their most recent replacement tree, communities like Winkler and Deloraine (Table 11) desperately need to prepare management plans to prepare for EAB. Without a properly prepared management plan, these communities could suffer drastic urban tree population loss. Conducting a basic tree inventory in these communities will provide basic demographics (size, species, etc.) of their urban tree population which will be beneficial for planning a stronger, more diverse urban forest that can withstand disturbances and for urban foresters to be able to plan maintenance and tree enhancement activities for their current urban forest.

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Appendix I

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
7945	Green ash	2.90	4.00	2.50	FAIR	8.70	0.60	3.40
7946	Green ash	3.10	4.50	2.80	FAIR	9.60	0.60	3.40
7947	American elm	8.30	7.50	9.60	FAIR	39.00	2.80	4.10
7948	Black ash	8.30	7.90	8.60	FAIR	27.90	1.70	3.30
7949	White spruce	37.90	11.00	19.60	FAIR	218.40	35.10	11.10
7950	White spruce	35.50	11.00	18.90	FAIR	206.10	33.10	10.90
7951	Bur oak	3.60	4.00	4.50	FAIR	11.70	1.20	2.60
7952	American elm	8.40	7.50	9.60	FAIR	39.00	2.80	4.10
7953	Black ash	18.40	14.00	23.80	FAIR	98.00	5.80	4.10
7954	American elm	24.40	12.00	36.30	FAIR	205.60	15.00	5.70
7955	American elm	26.80	13.00	40.70	FAIR	235.20	17.10	5.80
7956	American elm	27.20	8.00	41.90	FAIR	240.60	17.50	5.70
7957	American elm	28.50	14.50	45.40	FAIR	263.60	19.20	5.80
8707	Green ash	3.60	3.00	3.10	FAIR	10.70	0.70	3.40
8708	Green ash	3.70	5.50	3.50	FAIR	11.50	0.70	3.30
8709	American elm	33.70	15.50	56.70	FAIR	332.30	24.20	5.90
9070	Green ash	3.70	5.00	3.50	FAIR	11.50	0.70	3.30
9071	Green ash	3.80	4.50	3.50	FAIR	11.70	0.80	3.40
9072	American elm	34.70	15.00	59.40	FAIR	346.90	25.20	5.80
9073	American elm	35.00	10.50	59.40	FAIR	346.90	25.20	5.80
9074	hackberry spp	1.00	1.80	3.10	FAIR	13.00	0.80	4.10
9075	Green ash	3.90	3.00	3.50	FAIR	11.70	0.80	3.40
9076	Green ash	4.30	3.00	4.20	FAIR	13.80	0.90	3.30
9077	Green ash	4.50	5.00	4.20	FAIR	13.80	0.90	3.30
9078	Green ash	4.70	5.00	4.50	FAIR	15.00	1.00	3.30
9569	Green ash	4.70	4.50	4.50	FAIR	15.00	1.00	3.30
9570	American elm	35.10	17.50	59.40	FAIR	349.20	25.40	5.90
9571	Green ash	4.80	5.50	4.50	FAIR	15.00	1.00	3.30
9572	Black ash	8.60	5.00	9.10	FAIR	29.80	1.80	3.30
9573	American elm	35.30	15.50	60.80	FAIR	354.10	25.80	5.80
9574	Green ash	5.20	5.50	5.30	FAIR	17.50	1.10	3.30
9575	Green ash	5.30	6.50	5.30	FAIR	17.50	1.10	3.30
9576	American elm	35.40	14.00	60.80	FAIR	354.10	25.80	5.80
9577	Green ash	5.50	6.50	5.30	FAIR	17.80	1.20	3.40
9578	Green ash	5.50	5.50	5.30	FAIR	17.80	1.20	3.40
9579	Green ash	5.60	5.50	5.70	FAIR	18.90	1.20	3.30
9580	American elm	35.80	13.50	62.20	FAIR	361.10	26.30	5.80
9581	Green ash	5.70	6.50	5.70	FAIR	18.90	1.20	3.30
9582	Green ash	5.70	4.00	5.70	FAIR	18.90	1.20	3.30
9583	Green ash	5.70	6.00	5.70	FAIR	18.90	1.20	3.30
9584	Green ash	5.90	7.00	6.20	FAIR	20.40	1.30	3.30
9585	American elm	36.50	13.50	63.60	FAIR	368.00	26.80	5.80
9586	American elm	36.60	15.00	63.60	FAIR	368.00	26.80	5.80
9587	Green ash	6.10	5.00	6.20	FAIR	20.70	1.30	3.40
9588	Siberian elm	3.20	3.50	1.50	FAIR	6.40	0.40	4.20
9589	Green ash	6.20	3.50	6.20	FAIR	20.70	1.30	3.40

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m2)	Tree Condition	Leaf Area (m2)	Leaf Biomass (kg)	Leaf Area Index
9590	Black ash	28.50	13.00	43.00	FAIR	201.10	12.00	4.70
9591	Green ash	6.20	5.50	6.20	FAIR	20.70	1.30	3.40
9592	Green ash	6.20	4.50	6.20	FAIR	20.70	1.30	3.40
9593	Bur oak	2.30	3.50	3.50	FAIR	9.10	0.90	2.60
9594	Green ash	6.30	5.50	6.60	FAIR	21.90	1.40	3.30
9595	Green ash	6.30	6.00	6.60	FAIR	21.90	1.40	3.30
9596	Black ash	18.90	11.00	24.60	FAIR	102.50	6.10	4.20
9597	Green ash	6.40	7.50	6.60	FAIR	22.20	1.40	3.40
9598	Green ash	6.40	6.00	6.60	FAIR	22.20	1.40	3.40
9599	Green ash	6.60	5.00	6.60	FAIR	22.20	1.40	3.40
9600	Green ash	6.60	5.50	6.60	FAIR	22.20	1.40	3.40
9601	Green ash	6.70	4.50	7.10	FAIR	23.90	1.60	3.40
9602	Green ash	7.30	4.00	7.50	FAIR	25.60	1.70	3.40
9603	Green ash	7.40	5.00	8.00	FAIR	27.40	1.80	3.40
9604	Green ash	7.40	5.50	8.00	FAIR	27.40	1.80	3.40
9605	Green ash	7.50	6.00	8.00	FAIR	27.40	1.80	3.40
9606	Green ash	7.60	4.00	8.00	FAIR	27.40	1.80	3.40
9607	Green ash	7.70	5.00	8.00	FAIR	27.80	1.80	3.50
9608	Green ash	7.80	6.00	8.60	FAIR	29.30	1.90	3.40
9609	Green ash	7.80	6.50	8.60	FAIR	29.30	1.90	3.40
9610	Green ash	7.80	6.50	8.60	FAIR	29.30	1.90	3.40
9611	Green ash	7.90	8.50	8.60	FAIR	29.30	1.90	3.40
9612	Green ash	8.20	7.50	9.10	FAIR	31.30	2.00	3.40
9613	Green ash	8.30	6.50	9.10	FAIR	31.30	2.00	3.40
9614	Green ash	8.30	5.50	9.10	FAIR	31.30	2.00	3.40
9615	Green ash	8.40	10.00	9.10	FAIR	31.70	2.10	3.50
9616	Green ash	8.70	5.50	9.60	FAIR	33.80	2.20	3.50
9617	Green ash	8.70	6.00	9.60	FAIR	33.80	2.20	3.50
9618	Green ash	8.80	7.00	9.60	FAIR	33.80	2.20	3.50
9619	Green ash	8.80	6.00	9.60	FAIR	33.80	2.20	3.50
9620	Green ash	9.00	7.50	10.20	FAIR	35.60	2.30	3.50
9621	Green ash	9.00	6.00	10.20	FAIR	35.60	2.30	3.50
9622	Green ash	9.20	7.00	10.20	FAIR	36.00	2.30	3.50
9623	Green ash	9.20	7.50	10.20	FAIR	36.00	2.30	3.50
9624	Green ash	9.20	9.00	10.20	FAIR	36.00	2.30	3.50
9625	Green ash	9.30	6.00	10.20	FAIR	36.00	2.30	3.50
9626	Green ash	9.30	5.00	10.20	FAIR	36.00	2.30	3.50
9627	Green ash	9.50	6.00	10.80	FAIR	38.30	2.50	3.60
9628	American elm	36.70	15.00	63.60	FAIR	368.00	26.80	5.80
9629	Black ash	16.30	10.00	20.40	FAIR	80.40	4.80	3.90
9630	Green ash	9.50	6.00	10.80	FAIR	38.30	2.50	3.60
9631	Green ash	9.60	8.00	10.80	FAIR	38.30	2.50	3.60
9632	Green ash	9.90	5.50	11.30	FAIR	40.80	2.70	3.60
9633	Green ash	9.90	6.50	11.30	FAIR	40.80	2.70	3.60
9634	Green ash	10.20	8.00	11.30	FAIR	41.30	2.70	3.60
9635	Green ash	10.20	7.00	11.30	FAIR	41.30	2.70	3.60
9636	Green ash	10.30	6.00	11.90	FAIR	43.30	2.80	3.60
9637	Green ash	10.40	7.50	11.90	FAIR	43.30	2.80	3.60
9638	Green ash	10.40	9.00	11.90	FAIR	43.30	2.80	3.60

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
9639	American elm	36.70	13.50	63.60	FAIR	368.00	26.80	5.80
9640	American elm	37.00	16.50	65.00	FAIR	374.80	27.30	5.80
9641	American elm	37.10	12.00	65.00	FAIR	374.80	27.30	5.80
9642	American elm	37.30	14.00	65.00	FAIR	374.80	27.30	5.80
9643	American elm	38.00	16.50	66.50	FAIR	381.40	27.70	5.70
9644	American elm	38.20	11.00	67.90	FAIR	387.80	28.20	5.70
9645	American elm	38.40	15.50	67.90	FAIR	387.80	28.20	5.70
9646	American elm	38.80	12.00	69.40	FAIR	394.10	28.70	5.70
9647	Green ash	10.40	6.50	11.90	FAIR	43.30	2.80	3.60
9648	American elm	39.00	15.50	69.40	FAIR	394.10	28.70	5.70
9649	American elm	39.60	18.00	70.90	FAIR	400.10	29.10	5.60
9650	American elm	40.50	16.50	73.90	FAIR	409.70	29.80	5.50
9651	American elm	40.80	13.50	73.90	FAIR	411.70	29.90	5.60
9652	Green ash	10.40	6.00	11.90	FAIR	43.30	2.80	3.60
9653	Green ash	10.50	11.50	11.90	FAIR	43.30	2.80	3.60
9654	Green ash	10.60	7.20	11.90	FAIR	43.80	2.90	3.70
9655	Green ash	10.70	8.50	12.60	FAIR	45.90	3.00	3.70
9656	American elm	41.00	15.50	73.90	FAIR	411.70	29.90	5.60
9657	American elm	41.30	10.50	75.40	FAIR	417.10	30.30	5.50
9658	American elm	41.30	13.50	75.40	FAIR	417.10	30.30	5.50
9659	American elm	41.90	21.00	77.00	FAIR	420.40	30.60	5.50
9660	American elm	42.00	15.00	77.00	FAIR	422.40	30.70	5.50
9661	American basswood	27.00	12.00	31.20	FAIR	193.90	5.70	6.20
9662	Green ash	10.70	8.50	12.60	FAIR	45.90	3.00	3.70
9663	American basswood	25.90	12.50	29.20	FAIR	179.30	5.20	6.10
9664	Bur oak	4.90	3.50	5.30	FAIR	14.10	1.40	2.60
9665	Green ash	10.80	9.00	12.60	FAIR	45.90	3.00	3.70
9666	Green ash	10.80	8.00	12.60	FAIR	45.90	3.00	3.70
9667	Bur oak	3.70	4.00	4.50	FAIR	11.70	1.20	2.60
9668	Green ash	10.80	7.50	12.60	FAIR	45.90	3.00	3.70
9669	Boxelder	64.80	16.00	91.60	FAIR	421.20	38.50	4.60
9670	Green ash	10.90	6.00	12.60	FAIR	45.90	3.00	3.70
9671	Green ash	11.00	9.50	12.60	FAIR	46.50	3.00	3.70
9672	American basswood	20.20	8.50	21.20	FAIR	116.90	3.40	5.50
9673	Bur oak	8.20	5.50	8.60	FAIR	24.10	2.40	2.80
9674	Green ash	11.00	7.00	12.60	FAIR	46.50	3.00	3.70
9675	Bur oak	10.20	6.00	10.80	FAIR	31.80	3.10	3.00
9676	Bur oak	16.90	9.00	19.60	FAIR	69.40	6.80	3.50
9677	Green ash	11.00	7.50	12.60	FAIR	46.50	3.00	3.70
9678	Green ash	11.20	10.00	13.20	FAIR	48.60	3.20	3.70
9679	American basswood	21.70	11.50	23.80	FAIR	134.30	3.90	5.70
9680	Bur oak	11.30	7.00	11.90	FAIR	36.30	3.60	3.00
9681	Bur oak	16.40	7.50	18.90	FAIR	65.30	6.40	3.50
9682	American elm	42.00	20.50	77.00	FAIR	422.40	30.70	5.50
9683	American elm	42.30	15.00	78.50	FAIR	425.50	30.90	5.40
9684	American basswood	23.60	9.50	26.40	FAIR	155.00	4.50	5.90
9685	American elm	42.40	15.00	78.50	FAIR	425.50	30.90	5.40
9686	American elm	42.60	16.00	78.50	FAIR	427.30	31.10	5.40

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
9687	American elm	42.80	16.00	78.50	FAIR	427.30	31.10	5.40
9688	Bur oak	17.30	8.00	20.40	FAIR	72.80	7.20	3.60
9689	Green ash	11.30	7.50	13.20	FAIR	48.60	3.20	3.70
9690	Bur oak	2.30	3.00	3.50	FAIR	9.10	0.90	2.60
9691	Green ash	11.60	11.00	13.90	FAIR	51.50	3.40	3.70
9692	Bur oak	14.90	9.00	17.30	FAIR	57.70	5.70	3.30
9693	Bur oak	10.70	5.50	11.30	FAIR	34.20	3.40	3.00
9694	Bur oak	10.20	4.00	10.80	FAIR	29.20	2.90	2.70
9695	Green ash	11.70	10.00	13.90	FAIR	51.50	3.40	3.70
9696	Green ash	11.70	8.50	13.90	FAIR	51.50	3.40	3.70
9697	Green ash	11.70	11.00	13.90	FAIR	51.50	3.40	3.70
9698	Bur oak	12.00	7.50	13.20	FAIR	40.80	4.00	3.10
9699	American basswood	8.50	5.00	7.50	FAIR	32.20	0.90	4.30
9700	Green ash	11.80	10.50	13.90	FAIR	52.10	3.40	3.80
9701	Bur oak	12.30	8.00	13.20	FAIR	41.30	4.10	3.10
9702	Green ash	11.80	7.50	13.90	FAIR	52.10	3.40	3.80
9703	Green ash	11.80	8.00	13.90	FAIR	52.10	3.40	3.80
9704	Green ash	11.80	7.00	13.90	FAIR	52.10	3.40	3.80
9705	Green ash	11.90	7.00	13.90	FAIR	52.10	3.40	3.80
9706	American elm	42.90	18.00	78.50	FAIR	427.30	31.10	5.40
9707	American elm	42.90	17.00	78.50	FAIR	427.30	31.10	5.40
9708	American elm	43.00	17.00	80.10	FAIR	430.30	31.30	5.40
9709	American elm	43.40	14.00	80.10	FAIR	432.10	31.40	5.40
9710	Green ash	11.90	8.00	13.90	FAIR	52.10	3.40	3.80
9711	Green ash	12.10	9.50	14.50	FAIR	54.50	3.60	3.80
9712	Green ash	12.10	8.50	14.50	FAIR	54.50	3.60	3.80
9713	American elm	43.40	15.00	80.10	FAIR	432.10	31.40	5.40
9714	American elm	43.40	21.50	80.10	FAIR	432.10	31.40	5.40
9715	American elm	43.70	11.50	81.70	FAIR	434.90	31.60	5.30
9716	American elm	43.90	14.50	81.70	FAIR	436.60	31.80	5.30
9717	Green ash	12.20	7.00	14.50	FAIR	54.50	3.60	3.80
9718	Green ash	12.20	7.00	14.50	FAIR	54.50	3.60	3.80
9719	hackberry spp	1.20	1.80	3.10	FAIR	13.00	0.80	4.10
9720	Green ash	12.30	7.50	14.50	FAIR	55.10	3.60	3.80
9721	Green ash	12.50	7.50	14.50	FAIR	55.10	3.60	3.80
9722	Green ash	12.70	10.00	15.20	FAIR	58.30	3.80	3.80
9723	Green ash	12.70	7.00	15.20	FAIR	58.30	3.80	3.80
9724	Green ash	12.70	7.00	15.20	FAIR	58.30	3.80	3.80
9725	Green ash	12.70	12.50	15.20	FAIR	58.30	3.80	3.80
9726	Green ash	12.80	8.50	15.20	FAIR	58.30	3.80	3.80
9727	hackberry spp	2.30	2.50	3.10	FAIR	13.00	0.80	4.10
9728	Green ash	13.00	6.00	15.90	FAIR	60.70	4.00	3.80
9729	Green ash	13.00	6.00	15.90	FAIR	60.70	4.00	3.80
9730	Green ash	13.00	7.00	15.90	FAIR	60.70	4.00	3.80
9731	Green ash	13.00	12.50	15.90	FAIR	60.70	4.00	3.80
9732	Green ash	13.20	11.00	15.90	FAIR	61.50	4.00	3.90
9733	hackberry spp	2.00	2.50	3.10	FAIR	13.00	0.80	4.10
9734	Boxelder	65.70	11.00	91.60	FAIR	421.20	38.50	4.60

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
9735	Bur oak	2.10	2.50	3.50	FAIR	9.10	0.90	2.60
9736	Green ash	13.30	6.00	15.90	FAIR	61.50	4.00	3.90
9737	alder spp	4.20	4.00	6.60	FAIR	21.20	1.20	3.20
9738	Bur oak	5.20	4.00	5.70	FAIR	15.20	1.50	2.70
9739	Green ash	13.40	9.00	15.90	FAIR	61.50	4.00	3.90
9740	Green ash	13.40	7.50	15.90	FAIR	61.50	4.00	3.90
9741	American elm	44.20	15.00	83.30	FAIR	439.20	31.90	5.30
9742	Green ash	13.40	12.00	15.90	FAIR	61.50	4.00	3.90
9743	hackberry spp	1.90	2.50	3.10	FAIR	13.00	0.80	4.10
9744	Green ash	13.50	7.50	16.60	FAIR	64.80	4.20	3.90
9745	American elm	44.60	15.00	83.30	FAIR	440.90	32.10	5.30
9746	Green ash	13.50	8.00	16.60	FAIR	64.80	4.20	3.90
9747	Siberian elm	4.90	4.00	2.30	FAIR	9.20	0.60	4.00
9748	Boxelder	52.20	15.50	75.40	FAIR	395.90	36.20	5.20
9749	American elm	44.60	16.50	83.30	FAIR	440.90	32.10	5.30
9750	American elm	44.70	16.00	83.30	FAIR	440.90	32.10	5.30
9751	American elm	45.00	16.50	84.90	FAIR	443.20	32.20	5.20
9752	Green ash	13.60	8.50	16.60	FAIR	64.80	4.20	3.90
9753	Green ash	13.60	8.50	16.60	FAIR	64.80	4.20	3.90
9754	Green ash	13.70	10.50	16.60	FAIR	64.80	4.20	3.90
9755	Green ash	13.70	9.00	16.60	FAIR	64.80	4.20	3.90
9756	American elm	45.10	15.00	84.90	FAIR	443.20	32.20	5.20
9757	American elm	45.10	15.50	84.90	FAIR	443.20	32.20	5.20
9758	Green ash	13.80	9.00	16.60	FAIR	64.80	4.20	3.90
9759	American elm	45.20	17.50	84.90	FAIR	443.20	32.20	5.20
9760	American elm	46.40	20.00	88.20	FAIR	450.60	32.80	5.10
9761	American elm	46.90	15.50	89.90	FAIR	453.90	33.00	5.00
9762	Green ash	13.80	7.00	16.60	FAIR	64.80	4.20	3.90
9763	Green ash	13.80	10.50	16.60	FAIR	64.80	4.20	3.90
9764	Bur oak	9.50	7.50	10.20	FAIR	29.50	2.90	2.90
9765	Green ash	13.90	8.50	16.60	FAIR	64.80	4.20	3.90
9766	Bur oak	2.20	3.00	3.50	FAIR	9.10	0.90	2.60
9767	hackberry spp	2.00	3.00	3.10	FAIR	13.00	0.80	4.10
9768	Bur oak	1.70	2.50	3.50	FAIR	9.10	0.90	2.60
9769	Silver maple	31.20	18.50	52.80	FAIR	270.00	14.20	5.10
9770	Boxelder	23.60	13.50	30.20	FAIR	166.40	15.20	5.50
9771	Silver maple	58.80	17.50	107.50	FAIR	447.60	23.60	4.20
9772	Siberian elm	5.10	5.00	2.30	FAIR	9.30	0.60	4.10
9773	Silver maple	22.60	13.50	37.40	FAIR	180.40	9.50	4.80
9774	Green ash	14.00	8.50	17.30	FAIR	68.30	4.50	3.90
9775	American elm	47.00	12.50	89.90	FAIR	453.90	33.00	5.00
9776	Green ash	14.00	9.50	17.30	FAIR	68.30	4.50	3.90
9777	Green ash	14.10	13.50	17.30	FAIR	68.30	4.50	3.90
9778	Boxelder	59.90	16.50	84.90	FAIR	412.40	37.70	4.90
9779	Boxelder	56.60	18.50	81.70	FAIR	407.30	37.30	5.00
9780	Green ash	14.20	12.00	17.30	FAIR	68.30	4.50	3.90
9781	Bur oak	4.70	4.00	5.30	FAIR	14.10	1.40	2.60
9782	Green ash	14.20	12.00	17.30	FAIR	68.30	4.50	3.90

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
9783	Bur oak	6.70	6.50	7.10	FAIR	19.40	1.90	2.70
9784	Green ash	14.30	8.50	17.30	FAIR	68.30	4.50	3.90
9785	Green ash	14.40	9.50	17.30	FAIR	69.20	4.50	4.00
9786	Green ash	14.40	10.00	17.30	FAIR	69.20	4.50	4.00
9787	Bur oak	1.90	3.00	3.50	FAIR	9.10	0.90	2.60
9788	Green ash	14.40	7.50	17.30	FAIR	69.20	4.50	4.00
9789	Green ash	14.40	12.00	17.30	FAIR	69.20	4.50	4.00
9790	Black ash	12.60	9.50	14.50	FAIR	51.90	3.10	3.60
9791	Black ash	13.70	9.50	15.90	FAIR	58.60	3.50	3.70
9792	Black ash	12.00	6.50	13.90	FAIR	49.10	2.90	3.50
9793	Black ash	13.50	10.50	15.90	FAIR	58.60	3.50	3.70
9794	Black ash	24.90	9.00	35.30	FAIR	160.10	9.50	4.50
9795	Black ash	18.00	12.00	22.90	FAIR	93.70	5.60	4.10
9796	Black ash	19.50	11.50	25.50	FAIR	107.00	6.40	4.20
9797	Black ash	18.10	10.50	22.90	FAIR	93.70	5.60	4.10
9798	Black ash	16.50	10.50	20.40	FAIR	80.40	4.80	3.90
9799	Boxelder	35.20	14.00	49.00	FAIR	292.30	26.70	6.00
9800	American elm	47.00	18.50	89.90	FAIR	453.90	33.00	5.00
9801	American elm	47.30	15.00	89.90	FAIR	455.30	33.10	5.10
9802	American elm	47.30	20.00	89.90	FAIR	455.30	33.10	5.10
9803	Green ash	14.50	9.50	18.10	FAIR	71.90	4.70	4.00
9804	hackberry spp	1.80	2.50	3.10	FAIR	13.00	0.80	4.10
9805	American elm	47.30	16.50	89.90	FAIR	455.30	33.10	5.10
9806	Boxelder	60.50	18.00	86.60	FAIR	414.80	37.90	4.80
9807	Boxelder	49.30	16.50	70.90	FAIR	384.20	35.10	5.40
9808	American elm	47.70	16.50	91.60	FAIR	456.90	33.20	5.00
9809	Bur oak	5.60	5.00	6.20	FAIR	16.30	1.60	2.70
9810	American basswood	27.70	11.00	32.20	FAIR	201.30	5.90	6.30
9811	Boxelder	21.20	10.50	26.40	FAIR	139.90	12.80	5.30
9812	Boxelder	29.00	12.00	38.50	FAIR	225.80	20.70	5.90
9813	Bur oak	2.80	2.50	3.80	FAIR	9.90	1.00	2.60
9814	Bur oak	2.00	2.50	3.50	FAIR	9.10	0.90	2.60
9815	Green ash	14.50	10.00	18.10	FAIR	71.90	4.70	4.00
9816	Boxelder	42.50	13.00	60.80	FAIR	350.70	32.10	5.80
9817	American elm	47.80	19.00	91.60	FAIR	456.90	33.20	5.00
9818	American elm	47.80	13.00	91.60	FAIR	456.90	33.20	5.00
9819	Green ash	14.60	8.50	18.10	FAIR	71.90	4.70	4.00
9820	Green ash	14.60	7.50	18.10	FAIR	71.90	4.70	4.00
9821	Green ash	14.60	8.00	18.10	FAIR	71.90	4.70	4.00
9822	Green ash	14.60	8.00	18.10	FAIR	71.90	4.70	4.00
9823	American elm	48.40	19.50	93.30	FAIR	459.70	33.40	4.90
9824	American elm	48.40	16.00	93.30	FAIR	459.70	33.40	4.90
9825	American elm	48.50	17.00	93.30	FAIR	459.70	33.40	4.90
9826	American elm	48.50	17.00	93.30	FAIR	459.70	33.40	4.90
9827	American elm	48.70	16.00	95.00	FAIR	462.10	33.60	4.90
9828	American elm	48.70	16.50	95.00	FAIR	462.10	33.60	4.90
9829	American elm	48.70	21.00	95.00	FAIR	462.10	33.60	4.90
9830	Green ash	14.80	10.50	18.10	FAIR	71.90	4.70	4.00

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
9831	Boxelder	52.90	14.50	77.00	FAIR	398.90	36.50	5.20
9832	hackberry spp	0.50	1.50	3.10	FAIR	12.80	0.80	4.10
9833	American elm	48.90	15.50	95.00	FAIR	462.10	33.60	4.90
9834	American elm	48.90	20.50	95.00	FAIR	462.10	33.60	4.90
9835	American elm	49.20	14.00	95.00	FAIR	462.10	33.60	4.90
9836	American elm	49.20	18.00	95.00	FAIR	462.10	33.60	4.90
9837	American elm	49.30	17.00	95.00	FAIR	463.30	33.70	4.90
9838	American elm	49.50	14.00	96.80	FAIR	464.40	33.80	4.80
9839	Green ash	14.80	12.50	18.10	FAIR	71.90	4.70	4.00
9840	Green ash	14.80	10.00	18.10	FAIR	71.90	4.70	4.00
9841	Green ash	14.80	9.00	18.10	FAIR	71.90	4.70	4.00
9842	American elm	49.70	23.50	96.80	FAIR	464.40	33.80	4.80
9843	American elm	49.80	21.00	96.80	FAIR	464.40	33.80	4.80
9844	Green ash	14.90	10.50	18.10	FAIR	72.80	4.70	4.00
9845	Green ash	15.00	7.00	18.90	FAIR	75.70	4.90	4.00
9846	Green ash	15.10	11.50	18.90	FAIR	75.70	4.90	4.00
9847	Green ash	15.10	8.50	18.90	FAIR	75.70	4.90	4.00
9848	Green ash	15.10	13.00	18.90	FAIR	75.70	4.90	4.00
9849	Green ash	15.20	12.00	18.90	FAIR	75.70	4.90	4.00
9850	Green ash	15.20	10.00	18.90	FAIR	75.70	4.90	4.00
9851	Green ash	15.20	8.00	18.90	FAIR	75.70	4.90	4.00
9852	Green ash	15.20	9.50	18.90	FAIR	75.70	4.90	4.00
9853	Littleleaf linden	31.60	9.50	41.90	FAIR	225.80	16.90	5.40
9854	Bur oak	2.40	2.00	3.50	FAIR	8.60	0.80	2.50
9855	Littleleaf linden	40.60	7.50	55.40	FAIR	305.40	22.90	5.50
9856	Littleleaf linden	23.10	8.00	28.30	FAIR	138.70	10.40	4.90
9857	Green ash	15.30	8.50	18.90	FAIR	76.60	5.00	4.10
9858	Green ash	15.30	6.50	18.90	FAIR	76.60	5.00	4.10
9859	Green ash	15.40	6.50	18.90	FAIR	76.60	5.00	4.10
9860	Green ash	15.40	8.00	18.90	FAIR	76.60	5.00	4.10
9861	Green ash	15.40	10.00	18.90	FAIR	76.60	5.00	4.10
9862	Black ash	68.60	22.50	105.70	FAIR	366.80	21.80	3.50
9863	Green ash	15.50	8.50	19.60	FAIR	79.50	5.20	4.00
9864	Green ash	15.50	8.50	19.60	FAIR	79.50	5.20	4.00
9865	Littleleaf linden	21.10	9.00	25.50	FAIR	120.20	9.00	4.70
9866	Littleleaf linden	42.50	9.00	58.10	FAIR	331.90	24.90	5.70
9867	Green ash	15.60	12.00	19.60	FAIR	79.50	5.20	4.00
9868	Green ash	15.60	8.50	19.60	FAIR	79.50	5.20	4.00
9869	hackberry spp	1.80	2.50	3.10	FAIR	13.00	0.80	4.10
9870	Green ash	15.60	9.50	19.60	FAIR	79.50	5.20	4.00
9871	American elm	49.80	20.00	96.80	FAIR	464.40	33.80	4.80
9872	Green ash	15.60	12.50	19.60	FAIR	79.50	5.20	4.00
9873	Green ash	15.70	8.50	19.60	FAIR	79.50	5.20	4.00
9874	Green ash	15.70	8.00	19.60	FAIR	79.50	5.20	4.00
9875	Green ash	15.70	11.50	19.60	FAIR	79.50	5.20	4.00
9876	Green ash	15.80	11.00	19.60	FAIR	80.50	5.20	4.10
9877	Green ash	15.90	9.50	19.60	FAIR	80.50	5.20	4.10
9878	Green ash	16.00	9.00	20.40	FAIR	83.50	5.40	4.10

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
9879	American elm	50.10	16.50	98.50	FAIR	466.30	33.90	4.70
9880	American elm	50.70	16.50	98.50	FAIR	467.40	34.00	4.70
9881	American elm	50.70	15.50	98.50	FAIR	467.40	34.00	4.70
9882	Green ash	16.00	12.50	20.40	FAIR	83.50	5.40	4.10
9883	Green ash	16.10	11.00	20.40	FAIR	83.50	5.40	4.10
9884	Green ash	16.10	9.00	20.40	FAIR	83.50	5.40	4.10
9885	Green ash	16.10	8.50	20.40	FAIR	83.50	5.40	4.10
9886	Green ash	16.10	8.50	20.40	FAIR	83.50	5.40	4.10
9887	Green ash	16.10	8.50	20.40	FAIR	83.50	5.40	4.10
9888	Green ash	16.20	11.50	20.40	FAIR	83.50	5.40	4.10
9889	Green ash	16.20	9.50	20.40	FAIR	83.50	5.40	4.10
9890	Green ash	16.20	8.50	20.40	FAIR	83.50	5.40	4.10
9891	Green ash	16.20	9.50	20.40	FAIR	83.50	5.40	4.10
9892	White spruce	41.80	13.00	22.10	FAIR	258.20	41.50	11.70
9893	White spruce	31.80	11.00	16.60	FAIR	171.80	27.60	10.30
9894	American elm	50.80	13.00	100.30	FAIR	468.00	34.00	4.70
9895	hackberry spp	2.00	2.50	3.10	FAIR	13.00	0.80	4.10
9896	Boxelder	67.80	11.50	93.30	FAIR	423.10	38.70	4.50
9897	hackberry spp	4.60	4.50	5.30	FAIR	22.20	1.30	4.20
9898	Boxelder	43.50	12.00	62.20	FAIR	357.20	32.70	5.70
9899	Green ash	16.20	8.00	20.40	FAIR	83.50	5.40	4.10
9900	Green ash	16.30	12.00	20.40	FAIR	84.50	5.50	4.10
9901	hackberry spp	1.00	1.80	3.10	FAIR	13.00	0.80	4.10
9902	American elm	50.80	18.00	100.30	FAIR	468.00	34.00	4.70
9903	Bur oak	1.00	2.00	3.50	FAIR	8.60	0.80	2.50
9904	Green ash	16.30	8.50	20.40	FAIR	84.50	5.50	4.10
9905	Bur oak	6.50	5.00	7.10	FAIR	19.10	1.90	2.70
9906	Littleleaf linden	10.50	7.50	6.20	FAIR	25.30	1.90	4.10
9907	hackberry spp	4.70	4.00	5.30	FAIR	22.50	1.30	4.20
9908	Green ash	16.40	9.50	20.40	FAIR	84.50	5.50	4.10
9909	Littleleaf linden	17.60	8.50	18.90	FAIR	83.40	6.20	4.40
9910	Bur oak	8.10	5.50	8.60	FAIR	24.10	2.40	2.80
9911	Green ash	16.40	11.50	20.40	FAIR	84.50	5.50	4.10
9912	American elm	50.80	17.50	100.30	FAIR	468.00	34.00	4.70
9913	American elm	51.20	15.00	100.30	FAIR	468.00	34.00	4.70
9914	American elm	51.40	20.50	102.10	FAIR	507.20	36.90	5.00
9915	American elm	51.80	17.00	102.10	FAIR	469.40	34.10	4.60
9916	American elm	51.90	21.00	102.10	FAIR	469.40	34.10	4.60
9917	Boxelder	65.80	15.50	91.60	FAIR	421.20	38.50	4.60
9918	Green ash	16.50	12.00	20.40	FAIR	84.50	5.50	4.10
9919	American elm	52.00	19.00	102.10	FAIR	469.40	34.10	4.60
9920	American elm	52.00	19.50	102.10	FAIR	507.20	36.90	5.00
9921	American elm	52.30	16.00	103.90	FAIR	516.20	37.50	5.00
9922	American elm	52.40	17.50	103.90	FAIR	516.20	37.50	5.00
9923	American elm	52.40	18.50	103.90	FAIR	516.20	37.50	5.00
9924	American elm	53.00	19.50	105.70	FAIR	525.20	38.20	5.00
9925	American elm	53.00	13.50	105.70	FAIR	525.20	38.20	5.00
9926	American elm	53.30	16.00	105.70	FAIR	525.20	38.20	5.00

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
9927	American elm	53.40	22.00	105.70	FAIR	525.20	38.20	5.00
9928	American elm	53.40	20.50	105.70	FAIR	525.20	38.20	5.00
9929	Green ash	16.50	8.50	20.40	FAIR	84.50	5.50	4.10
9930	Green ash	16.50	12.00	20.40	FAIR	84.50	5.50	4.10
9931	Green ash	16.60	8.50	21.20	FAIR	87.60	5.70	4.10
9932	Green ash	16.60	7.50	21.20	FAIR	87.60	5.70	4.10
9933	Green ash	16.80	13.50	21.20	FAIR	88.60	5.80	4.20
9934	Green ash	16.80	10.00	21.20	FAIR	88.60	5.80	4.20
9935	Green ash	16.80	9.00	21.20	FAIR	88.60	5.80	4.20
9936	Green ash	16.80	8.00	21.20	FAIR	88.60	5.80	4.20
9937	Green ash	16.90	10.50	21.20	FAIR	88.60	5.80	4.20
9938	hackberry spp	1.80	2.50	3.10	FAIR	13.00	0.80	4.10
9939	American elm	53.50	15.50	107.50	FAIR	528.90	38.50	4.90
9940	American elm	53.50	17.00	107.50	FAIR	528.90	38.50	4.90
9941	American elm	53.70	19.00	107.50	FAIR	534.30	38.90	5.00
9942	alder spp	3.20	3.00	5.70	FAIR	17.10	0.90	3.00
9943	American elm	53.80	10.50	107.50	FAIR	460.30	33.50	4.30
9944	American elm	54.30	23.50	109.40	FAIR	543.40	39.50	5.00
9945	Boxelder	60.30	14.50	86.60	FAIR	414.80	37.90	4.80
9946	Paper birch	19.90	13.00	18.90	FAIR	90.10	6.30	4.80
9947	hackberry spp	2.00	2.50	3.10	FAIR	13.00	0.80	4.10
9948	Green ash	16.90	13.00	21.20	FAIR	88.60	5.80	4.20
9949	Bur oak	8.30	5.00	8.60	FAIR	24.40	2.40	2.80
9950	Littleleaf linden	12.90	7.50	10.20	FAIR	42.10	3.20	4.10
9951	Bur oak	2.20	2.50	3.50	FAIR	9.10	0.90	2.60
9952	Boxelder	62.50	9.50	88.20	FAIR	401.20	36.70	4.50
9953	Green ash	17.00	9.50	21.20	FAIR	88.60	5.80	4.20
9954	Boxelder	52.00	13.00	75.40	FAIR	395.90	36.20	5.20
9955	Boxelder	42.60	13.50	60.80	FAIR	350.70	32.10	5.80
9956	Boxelder	57.00	14.00	81.70	FAIR	407.30	37.30	5.00
9957	Boxelder	86.10	18.50	103.90	FAIR	432.60	39.60	4.20
9958	hackberry spp	4.90	5.00	5.30	FAIR	22.50	1.30	4.20
9959	Boxelder	65.30	19.00	91.60	FAIR	421.20	38.50	4.60
9960	Green ash	17.00	12.50	21.20	FAIR	88.60	5.80	4.20
9961	hackberry spp	2.60	3.50	3.10	FAIR	13.20	0.80	4.20
9962	Green ash	17.00	14.00	21.20	FAIR	88.60	5.80	4.20
9963	Bur oak	4.60	4.50	5.30	FAIR	13.90	1.40	2.60
9964	Boxelder	59.00	15.00	84.90	FAIR	412.40	37.70	4.90
9965	American elm	54.30	17.00	109.40	FAIR	543.40	39.50	5.00
9966	Boxelder	47.80	14.00	69.40	FAIR	380.70	34.80	5.50
9967	Boxelder	93.00	14.00	103.90	FAIR	432.60	39.60	4.20
9968	Green ash	17.00	10.00	21.20	FAIR	88.60	5.80	4.20
9969	Green ash	17.00	8.00	21.20	FAIR	88.60	5.80	4.20
9970	Green ash	17.20	10.00	22.10	FAIR	92.90	6.10	4.20
9971	Green ash	17.20	9.00	22.10	FAIR	92.90	6.10	4.20
9972	Green ash	17.20	9.50	22.10	FAIR	92.90	6.10	4.20
9973	hackberry spp	5.10	5.00	5.70	FAIR	24.30	1.40	4.20
9974	hackberry spp	5.10	3.00	5.70	FAIR	24.30	1.40	4.20

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
9975	Bur oak	3.50	4.00	4.20	FAIR	10.90	1.10	2.60
9976	Siberian elm	7.70	5.00	3.80	FAIR	15.10	1.00	4.00
9977	Green ash	17.20	14.00	22.10	FAIR	92.90	6.10	4.20
9978	Green ash	17.30	8.00	22.10	FAIR	92.90	6.10	4.20
9979	Siberian elm	9.40	4.50	4.90	FAIR	19.50	1.30	4.00
9980	Siberian elm	9.60	5.50	5.30	FAIR	21.00	1.40	4.00
9981	Green ash	17.30	8.00	22.10	FAIR	92.90	6.10	4.20
9982	American elm	54.40	14.50	109.40	FAIR	543.40	39.50	5.00
9983	American elm	54.60	20.00	109.40	FAIR	543.40	39.50	5.00
9984	The David Elm	8.00	6.50	8.60	FAIR	32.10	2.20	3.80
9985	Littleleaf linden	13.40	9.00	11.30	FAIR	47.10	3.50	4.10
9986	The David Elm	18.70	8.50	23.80	FAIR	118.40	8.10	5.00
9987	The David Elm	12.70	6.50	14.50	FAIR	61.60	4.20	4.20
9988	Green ash	17.30	8.00	22.10	FAIR	92.90	6.10	4.20
9989	American elm	54.80	21.00	109.40	FAIR	543.40	39.50	5.00
9990	Siberian elm	9.60	6.00	5.30	FAIR	21.00	1.40	4.00
9991	American elm	54.90	22.50	111.20	FAIR	547.10	39.80	4.90
9992	American elm	55.00	14.70	111.20	FAIR	552.70	40.20	5.00
9993	Green ash	45.20	20.50	70.90	FAIR	336.80	22.00	4.80
9994	American elm	55.30	21.50	111.20	FAIR	552.70	40.20	5.00
9995	American elm	55.40	15.00	111.20	FAIR	552.70	40.20	5.00
9996	Green ash	17.30	7.50	22.10	FAIR	92.90	6.10	4.20
9997	Green ash	17.40	8.00	22.10	FAIR	92.90	6.10	4.20
9998	American elm	55.40	16.50	111.20	FAIR	552.70	40.20	5.00
9999	Green ash	17.50	8.50	22.10	FAIR	92.90	6.10	4.20
10000	American elm	55.90	13.00	113.10	FAIR	562.00	40.90	5.00
10001	Green ash	17.50	12.00	22.10	FAIR	92.90	6.10	4.20
10002	Green ash	17.60	13.50	22.90	FAIR	96.20	6.30	4.20
10003	Bur oak	2.20	2.50	3.50	FAIR	9.10	0.90	2.60
10004	American elm	56.00	17.50	113.10	FAIR	562.00	40.90	5.00
10005	Green ash	17.60	12.00	22.90	FAIR	96.20	6.30	4.20
10006	American elm	56.00	17.50	113.10	FAIR	562.00	40.90	5.00
10007	American elm	56.00	17.00	113.10	FAIR	562.00	40.90	5.00
10008	Green ash	17.80	7.00	22.90	FAIR	97.30	6.30	4.20
10009	Green ash	17.80	12.00	22.90	FAIR	97.30	6.30	4.20
10010	American elm	56.50	14.00	115.00	FAIR	565.70	41.10	4.90
10011	American elm	56.60	18.50	115.00	FAIR	565.70	41.10	4.90
10012	American elm	56.70	19.50	115.00	FAIR	565.70	41.10	4.90
10013	American elm	57.30	17.00	116.90	FAIR	575.10	41.80	4.90
10014	American elm	57.40	18.50	116.90	FAIR	575.10	41.80	4.90
10015	American elm	58.00	17.00	118.80	FAIR	584.50	42.50	4.90
10016	Green ash	17.90	9.50	22.90	FAIR	97.30	6.30	4.20
10017	Siberian elm	9.80	5.00	5.30	FAIR	21.00	1.40	4.00
10018	Siberian elm	9.90	5.50	5.30	FAIR	21.00	1.40	4.00
10019	Siberian elm	11.40	9.00	6.60	FAIR	26.60	1.80	4.00
10020	Siberian elm	11.90	7.00	7.10	FAIR	28.60	1.90	4.00
10021	Siberian elm	12.00	5.50	7.10	FAIR	28.60	1.90	4.00
10022	Green ash	17.90	11.00	22.90	FAIR	97.30	6.30	4.20

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
10023	Siberian elm	12.40	7.00	7.50	FAIR	30.60	2.10	4.10
10024	Siberian elm	12.60	5.50	8.00	FAIR	32.30	2.20	4.00
10025	Siberian elm	12.80	5.00	8.00	FAIR	32.80	2.20	4.10
10026	Green ash	18.00	10.50	22.90	FAIR	97.30	6.30	4.20
10027	American basswood	9.30	6.50	8.60	FAIR	36.90	1.10	4.30
10028	Siberian elm	13.00	5.50	8.00	FAIR	32.80	2.20	4.10
10029	Siberian elm	13.20	5.00	8.60	FAIR	35.00	2.40	4.10
10030	Siberian elm	13.30	7.00	8.60	FAIR	35.00	2.40	4.10
10031	Siberian elm	13.40	6.00	8.60	FAIR	35.00	2.40	4.10
10032	Siberian elm	14.00	8.00	9.10	FAIR	37.40	2.50	4.10
10033	Green ash	18.00	11.00	22.90	FAIR	97.30	6.30	4.20
10034	Siberian elm	14.20	5.50	9.60	FAIR	39.90	2.70	4.10
10035	Siberian elm	14.30	6.00	9.60	FAIR	39.90	2.70	4.10
10036	Green ash	18.00	9.00	22.90	FAIR	97.30	6.30	4.20
10037	Siberian elm	14.50	5.00	9.60	FAIR	39.90	2.70	4.10
10038	Green ash	18.10	10.00	22.90	FAIR	97.30	6.30	4.20
10039	Green ash	18.20	12.00	23.80	FAIR	101.80	6.60	4.30
10040	American elm	58.30	18.00	118.80	FAIR	584.50	42.50	4.90
10041	Siberian elm	14.50	6.00	9.60	FAIR	39.90	2.70	4.10
10042	Siberian elm	14.60	12.00	9.60	FAIR	40.40	2.80	4.20
10043	Green ash	18.20	11.00	23.80	FAIR	101.80	6.60	4.30
10044	Boxelder	2.20	2.00	3.80	FAIR	13.00	1.20	3.40
10045	Blue spruce	51.30	22.50	37.40	FAIR	277.30	47.00	7.40
10046	The David Elm	11.20	6.00	12.60	FAIR	51.20	3.50	4.10
10047	American elm	58.60	19.50	120.80	FAIR	594.10	43.20	4.90
10048	The David Elm	5.60	4.00	6.20	FAIR	22.00	1.50	3.60
10049	American elm	59.80	19.00	122.70	FAIR	603.70	43.90	4.90
10050	Green ash	18.30	11.00	23.80	FAIR	101.80	6.60	4.30
10051	American elm	60.00	20.50	122.70	FAIR	603.70	43.90	4.90
10052	Green ash	18.50	12.50	23.80	FAIR	101.80	6.60	4.30
10053	Green ash	18.50	13.00	23.80	FAIR	101.80	6.60	4.30
10054	Siberian elm	14.80	6.50	10.20	FAIR	42.50	2.90	4.20
10055	Green ash	18.50	12.50	23.80	FAIR	101.80	6.60	4.30
10056	White spruce	26.00	12.00	13.20	FAIR	123.90	19.90	9.40
10057	White spruce	18.70	9.00	9.10	FAIR	74.50	12.00	8.20
10058	White spruce	18.40	9.00	9.10	FAIR	74.50	12.00	8.20
10059	White spruce	21.60	9.50	10.80	FAIR	93.40	15.00	8.70
10060	White spruce	24.00	8.00	11.90	FAIR	107.80	17.30	9.00
10061	White spruce	22.50	11.00	11.30	FAIR	100.40	16.10	8.90
10062	Showy mountain ash	5.20	5.50	5.70	FAIR	17.10	1.40	3.00
10063	Blue spruce	68.00	18.50	40.70	FAIR	301.90	51.20	7.40
10064	Blue spruce	44.60	17.00	31.20	FAIR	357.00	60.60	11.50
10065	Green ash	18.50	10.50	23.80	FAIR	101.80	6.60	4.30
10066	Green ash	18.50	11.00	23.80	FAIR	101.80	6.60	4.30
10067	Boxelder	62.50	14.50	88.20	FAIR	417.00	38.10	4.70
10068	Green ash	18.60	13.50	23.80	FAIR	101.80	6.60	4.30
10069	Bur oak	6.80	4.00	7.10	FAIR	19.40	1.90	2.70

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
10070	Green ash	18.70	12.00	24.60	FAIR	106.50	6.90	4.30
10071	Green ash	18.70	11.50	24.60	FAIR	106.50	6.90	4.30
10072	American elm	60.10	16.50	124.70	FAIR	613.40	44.60	4.90
10073	American elm	60.10	18.00	124.70	FAIR	613.40	44.60	4.90
10074	American elm	60.40	18.00	124.70	FAIR	613.40	44.60	4.90
10075	American elm	60.50	15.50	124.70	FAIR	613.40	44.60	4.90
10076	Siberian elm	14.90	8.00	10.20	FAIR	42.50	2.90	4.20
10077	Siberian elm	15.00	9.50	10.20	FAIR	42.50	2.90	4.20
10078	Siberian elm	15.00	8.50	10.20	FAIR	42.50	2.90	4.20
10079	Green ash	18.70	10.50	24.60	FAIR	106.50	6.90	4.30
10080	Green ash	18.80	13.00	24.60	FAIR	106.50	6.90	4.30
10081	Green ash	18.80	12.00	24.60	FAIR	106.50	6.90	4.30
10082	Green ash	18.80	11.00	24.60	FAIR	106.50	6.90	4.30
10083	Green ash	18.80	13.50	24.60	FAIR	106.50	6.90	4.30
10084	Green ash	18.90	9.50	24.60	FAIR	106.50	6.90	4.30
10085	Green ash	18.90	11.00	24.60	FAIR	106.50	6.90	4.30
10086	Green ash	18.90	9.50	24.60	FAIR	106.50	6.90	4.30
10087	Green ash	19.00	11.50	24.60	FAIR	106.50	6.90	4.30
10088	Siberian elm	15.00	11.50	10.20	FAIR	42.50	2.90	4.20
10089	Siberian elm	15.30	10.00	10.80	FAIR	45.20	3.10	4.20
10090	Siberian elm	15.80	7.50	11.30	FAIR	48.00	3.30	4.20
10091	Siberian elm	15.90	9.00	11.30	FAIR	48.00	3.30	4.20
10092	Siberian elm	15.90	8.50	11.30	FAIR	48.00	3.30	4.20
10093	Siberian elm	16.10	12.00	11.30	FAIR	48.60	3.30	4.30
10094	The David Elm	4.40	4.00	5.30	FAIR	18.70	1.30	3.50
10095	The David Elm	6.60	4.50	7.50	FAIR	27.30	1.90	3.60
10096	The David Elm	4.70	4.50	5.30	FAIR	18.70	1.30	3.50
10097	Siberian elm	16.20	9.00	11.30	FAIR	48.60	3.30	4.30
10098	Siberian elm	16.30	5.00	11.30	FAIR	47.30	3.20	4.20
10099	Siberian elm	16.40	7.50	11.90	FAIR	50.90	3.50	4.30
10100	American elm	60.70	19.00	124.70	FAIR	613.40	44.60	4.90
10101	American elm	60.80	11.50	124.70	FAIR	467.90	34.00	3.80
10102	American elm	61.10	19.00	126.70	FAIR	623.20	45.30	4.90
10103	American elm	61.20	12.50	126.70	FAIR	623.20	45.30	4.90
10104	American elm	61.60	18.50	128.70	FAIR	633.00	46.00	4.90
10105	Boxelder	29.50	13.00	39.60	FAIR	233.10	21.30	5.90
10106	Boxelder	33.40	13.00	45.40	FAIR	270.10	24.70	6.00
10107	cottonwood spp	79.00	21.50	165.10	FAIR	581.10	39.30	3.50
10108	Boxelder	36.10	13.50	50.30	FAIR	299.70	27.40	6.00
10109	Green ash	19.00	11.50	24.60	FAIR	106.50	6.90	4.30
10110	Green ash	19.00	12.50	24.60	FAIR	106.50	6.90	4.30
10111	Green ash	19.00	8.50	24.60	FAIR	106.50	6.90	4.30
10112	Green ash	19.00	12.50	24.60	FAIR	106.50	6.90	4.30
10113	Green ash	19.00	9.50	24.60	FAIR	106.50	6.90	4.30
10114	Green ash	19.10	12.00	24.60	FAIR	106.50	6.90	4.30
10115	Green ash	19.10	10.00	24.60	FAIR	106.50	6.90	4.30
10116	Green ash	19.20	12.00	24.60	FAIR	107.70	7.00	4.40
10117	hackberry spp	2.40	3.00	3.10	FAIR	13.00	0.80	4.10

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
10118	Green ash	19.20	11.50	24.60	FAIR	107.70	7.00	4.40
10119	Green ash	19.30	15.50	25.50	FAIR	111.20	7.30	4.40
10120	Green ash	19.30	7.50	25.50	FAIR	111.20	7.30	4.40
10121	The David Elm	18.60	8.00	23.80	FAIR	117.00	8.00	4.90
10122	The David Elm	9.70	6.00	10.80	FAIR	42.10	2.90	3.90
10123	American elm	61.70	21.50	128.70	FAIR	633.00	46.00	4.90
10124	Blue spruce	7.90	5.50	3.50	FAIR	21.00	3.60	6.10
10125	The David Elm	17.30	9.50	21.20	FAIR	101.80	6.90	4.80
10126	Bur oak	11.40	6.50	12.60	FAIR	38.50	3.80	3.10
10127	The David Elm	30.80	10.00	47.80	FAIR	276.10	18.80	5.80
10128	Bur oak	9.70	7.00	10.20	FAIR	29.90	3.00	2.90
10129	Green ash	19.30	8.00	25.50	FAIR	111.20	7.30	4.40
10130	Green ash	19.40	12.50	25.50	FAIR	111.20	7.30	4.40
10131	American elm	61.70	15.00	128.70	FAIR	633.00	46.00	4.90
10132	American elm	62.20	15.50	128.70	FAIR	633.00	46.00	4.90
10133	American elm	62.20	19.00	128.70	FAIR	633.00	46.00	4.90
10134	American elm	62.80	22.50	130.70	FAIR	643.00	46.80	4.90
10135	Green ash	19.40	10.00	25.50	FAIR	111.20	7.30	4.40
10136	Green ash	19.40	10.50	25.50	FAIR	111.20	7.30	4.40
10137	Green ash	19.40	12.00	25.50	FAIR	111.20	7.30	4.40
10138	Green ash	19.40	15.50	25.50	FAIR	111.20	7.30	4.40
10139	Green ash	19.60	10.00	25.50	FAIR	111.20	7.30	4.40
10140	Green ash	19.60	10.50	25.50	FAIR	111.20	7.30	4.40
10141	Littleleaf linden	31.90	12.50	43.00	FAIR	233.40	17.50	5.40
10142	Littleleaf linden	43.00	14.00	58.10	FAIR	334.20	25.00	5.80
10143	Green ash	19.60	10.50	25.50	FAIR	111.20	7.30	4.40
10144	Bur oak	2.90	3.00	3.80	FAIR	9.90	1.00	2.60
10145	hackberry spp	2.00	4.00	3.10	FAIR	13.00	0.80	4.10
10146	Showy mountain ash	30.20	10.00	37.40	FAIR	165.60	13.10	4.40
10147	Green ash	19.60	13.00	25.50	FAIR	111.20	7.30	4.40
10148	Green ash	19.70	10.00	25.50	FAIR	112.50	7.30	4.40
10149	Green ash	19.70	12.00	25.50	FAIR	112.50	7.30	4.40
10150	Green ash	19.70	9.50	25.50	FAIR	112.50	7.30	4.40
10151	Green ash	19.70	11.00	25.50	FAIR	112.50	7.30	4.40
10152	Green ash	19.80	11.50	26.40	FAIR	116.10	7.60	4.40
10153	Green ash	19.80	10.50	26.40	FAIR	116.10	7.60	4.40
10154	Green ash	19.80	10.00	26.40	FAIR	116.10	7.60	4.40
10155	Green ash	19.80	12.00	26.40	FAIR	116.10	7.60	4.40
10156	hackberry spp	4.00	4.50	4.50	FAIR	18.90	1.10	4.20
10157	Green ash	19.80	11.50	26.40	FAIR	116.10	7.60	4.40
10158	Green ash	19.80	10.50	26.40	FAIR	116.10	7.60	4.40
10159	Littleleaf linden	32.20	9.50	43.00	FAIR	233.40	17.50	5.40
10160	Green ash	19.90	8.50	26.40	FAIR	116.10	7.60	4.40
10161	hackberry spp	2.70	3.50	3.10	FAIR	13.20	0.80	4.20
10162	Bur oak	7.10	5.50	7.50	FAIR	20.80	2.00	2.70
10163	Green ash	19.90	9.50	26.40	FAIR	116.10	7.60	4.40
10164	Green ash	19.90	10.00	26.40	FAIR	116.10	7.60	4.40

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
10165	Green ash	20.00	15.00	26.40	FAIR	116.10	7.60	4.40
10166	Green ash	20.10	10.50	26.40	FAIR	116.10	7.60	4.40
10167	hackberry spp	3.10	3.00	3.50	FAIR	14.60	0.90	4.20
10168	hackberry spp	2.60	3.00	3.10	FAIR	13.20	0.80	4.20
10169	Green ash	20.10	13.50	26.40	FAIR	116.10	7.60	4.40
10170	Green ash	20.10	10.50	26.40	FAIR	116.10	7.60	4.40
10171	Green ash	20.10	10.50	26.40	FAIR	116.10	7.60	4.40
10172	Green ash	20.10	8.00	26.40	FAIR	116.10	7.60	4.40
10173	Green ash	20.10	15.00	26.40	FAIR	116.10	7.60	4.40
10174	American basswood	20.80	9.00	22.10	FAIR	122.50	3.60	5.60
10175	Green ash	20.20	9.50	26.40	FAIR	117.40	7.70	4.40
10176	Green ash	20.20	14.50	26.40	FAIR	117.40	7.70	4.40
10177	American elm	62.90	18.00	130.70	FAIR	643.00	46.80	4.90
10178	American elm	63.00	18.50	130.70	FAIR	643.00	46.80	4.90
10179	American elm	63.70	17.50	132.70	FAIR	653.00	47.50	4.90
10180	American elm	63.80	15.00	132.70	FAIR	653.00	47.50	4.90
10181	American elm	63.90	17.00	132.70	FAIR	659.60	48.00	5.00
10182	American elm	64.20	16.00	134.80	FAIR	663.00	48.20	4.90
10183	American elm	64.80	17.50	136.80	FAIR	673.20	49.00	4.90
10184	American elm	65.40	19.00	136.80	FAIR	673.20	49.00	4.90
10185	Green ash	20.20	10.50	26.40	FAIR	117.40	7.70	4.40
10186	American elm	66.50	17.50	141.00	FAIR	693.80	50.50	4.90
10187	Green ash	20.20	10.00	26.40	FAIR	117.40	7.70	4.40
10188	Bur oak	9.60	6.50	10.20	FAIR	29.50	2.90	2.90
10189	Green ash	20.30	9.50	26.40	FAIR	117.40	7.70	4.40
10190	Green ash	20.30	12.50	26.40	FAIR	117.40	7.70	4.40
10191	Green ash	20.50	10.50	27.30	FAIR	121.10	7.90	4.40
10192	Green ash	20.50	16.00	27.30	FAIR	121.10	7.90	4.40
10193	American elm	66.60	18.50	141.00	FAIR	693.80	50.50	4.90
10194	Boxelder	51.20	15.00	73.90	FAIR	392.80	35.90	5.30
10195	Green ash	20.60	13.00	27.30	FAIR	121.10	7.90	4.40
10196	Green ash	20.70	9.00	27.30	FAIR	121.10	7.90	4.40
10197	Green ash	20.70	10.50	27.30	FAIR	121.10	7.90	4.40
10198	American basswood	23.20	9.00	25.50	FAIR	148.40	4.30	5.80
10199	Green ash	20.70	11.00	27.30	FAIR	121.10	7.90	4.40
10200	Boxelder	62.90	12.00	88.20	FAIR	417.00	38.10	4.70
10201	Green ash	20.70	9.50	27.30	FAIR	121.10	7.90	4.40
10202	Boxelder	55.20	13.00	80.10	FAIR	404.60	37.00	5.10
10203	Green ash	20.80	12.50	27.30	FAIR	122.50	8.00	4.50
10204	Boxelder	61.50	12.00	86.60	FAIR	414.80	37.90	4.80
10205	Bur oak	3.20	3.50	4.20	FAIR	10.80	1.10	2.60
10206	Bur oak	3.70	3.00	4.50	FAIR	11.70	1.20	2.60
10207	Green ash	20.90	11.50	27.30	FAIR	122.50	8.00	4.50
10208	Green ash	20.90	14.50	27.30	FAIR	122.50	8.00	4.50
10209	Green ash	20.90	9.50	27.30	FAIR	122.50	8.00	4.50
10210	Green ash	21.00	14.00	28.30	FAIR	126.30	8.20	4.50
10211	Green ash	21.00	10.50	28.30	FAIR	126.30	8.20	4.50
10212	Green ash	21.00	9.50	28.30	FAIR	126.30	8.20	4.50

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
10213	Green ash	21.10	10.00	28.30	FAIR	126.30	8.20	4.50
10214	The David Elm	4.40	6.00	5.30	FAIR	18.70	1.30	3.50
10215	Green ash	21.10	11.50	28.30	FAIR	126.30	8.20	4.50
10216	Green ash	21.10	12.00	28.30	FAIR	126.30	8.20	4.50
10217	Green ash	21.20	13.00	28.30	FAIR	126.30	8.20	4.50
10218	Green ash	21.20	11.00	28.30	FAIR	126.30	8.20	4.50
10219	Green ash	21.20	11.00	28.30	FAIR	126.30	8.20	4.50
10220	Green ash	21.20	11.50	28.30	FAIR	126.30	8.20	4.50
10221	Green ash	21.30	14.00	28.30	FAIR	127.60	8.30	4.50
10222	American elm	67.20	22.50	141.00	FAIR	700.80	51.00	5.00
10223	Boxelder	71.30	14.50	96.80	FAIR	426.70	39.00	4.40
10224	Littleleaf linden	39.40	10.50	54.10	FAIR	306.10	22.90	5.70
10225	Green ash	21.50	12.50	28.30	FAIR	127.60	8.30	4.50
10226	Littleleaf linden	31.60	9.50	41.90	FAIR	225.80	16.90	5.40
10227	hackberry spp	1.70	3.00	3.10	FAIR	13.00	0.80	4.10
10228	alder spp	4.50	5.50	6.60	FAIR	21.70	1.20	3.30
10229	Littleleaf linden	30.60	10.00	40.70	FAIR	218.30	16.40	5.40
10230	White spruce	49.80	20.50	27.30	FAIR	210.90	33.90	7.70
10231	White spruce	32.70	12.50	16.60	FAIR	171.80	27.60	10.30
10232	White spruce	31.00	12.50	15.90	FAIR	161.30	25.90	10.10
10233	White spruce	27.80	12.50	13.90	FAIR	132.60	21.30	9.60
10234	White spruce	30.10	10.50	15.20	FAIR	151.30	24.30	10.00
10235	White spruce	27.20	12.50	13.90	FAIR	132.60	21.30	9.60
10236	White spruce	30.40	12.50	15.90	FAIR	161.30	25.90	10.10
10237	White spruce	37.50	8.00	19.60	FAIR	166.60	26.80	8.50
10238	White spruce	36.20	13.50	18.90	FAIR	206.10	33.10	10.90
10239	White spruce	34.00	13.50	17.30	FAIR	182.80	29.40	10.50
10240	White spruce	13.30	7.50	6.20	FAIR	45.70	7.30	7.40
10241	White spruce	30.00	12.50	15.20	FAIR	151.30	24.30	10.00
10242	White spruce	38.80	12.50	20.40	FAIR	231.20	37.10	11.30
10243	White spruce	37.50	12.50	19.60	FAIR	218.40	35.10	11.10
10244	White spruce	40.40	13.00	21.20	FAIR	244.50	39.30	11.50
10245	White spruce	40.60	11.50	21.20	FAIR	244.50	39.30	11.50
10246	White spruce	23.00	9.00	11.30	FAIR	100.40	16.10	8.90
10247	White spruce	25.70	10.00	13.20	FAIR	123.90	19.90	9.40
10248	White spruce	22.20	10.50	10.80	FAIR	93.40	15.00	8.70
10249	White spruce	32.20	10.00	16.60	FAIR	171.80	27.60	10.30
10250	Green ash	21.50	12.00	28.30	FAIR	127.60	8.30	4.50
10251	Boxelder	75.00	15.00	100.30	FAIR	429.80	39.30	4.30
10252	Showy mountain ash	14.00	7.00	15.20	FAIR	52.60	4.20	3.50
10253	Bur oak	9.80	5.00	10.20	FAIR	29.90	3.00	2.90
10254	Green ash	21.50	13.50	28.30	FAIR	127.60	8.30	4.50
10255	Green ash	21.60	11.50	29.20	FAIR	131.50	8.60	4.50
10256	Green ash	21.60	16.50	29.20	FAIR	131.50	8.60	4.50
10257	Green ash	21.70	12.00	29.20	FAIR	131.50	8.60	4.50
10258	Green ash	22.00	12.50	29.20	FAIR	132.90	8.70	4.50
10259	Green ash	22.00	9.50	29.20	FAIR	132.90	8.70	4.50

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
10260	American elm	67.20	21.00	141.00	FAIR	700.80	51.00	5.00
10261	Green ash	22.10	12.50	29.20	FAIR	132.90	8.70	4.50
10262	Green ash	22.10	10.00	29.20	FAIR	132.90	8.70	4.50
10263	Green ash	22.10	11.00	29.20	FAIR	132.90	8.70	4.50
10264	Green ash	22.10	10.50	29.20	FAIR	132.90	8.70	4.50
10265	Green ash	22.20	10.50	30.20	FAIR	136.80	8.90	4.50
10266	Green ash	22.20	13.00	30.20	FAIR	136.80	8.90	4.50
10267	Green ash	22.40	15.50	30.20	FAIR	138.30	9.00	4.60
10268	Green ash	22.40	11.00	30.20	FAIR	138.30	9.00	4.60
10269	Green ash	22.40	14.00	30.20	FAIR	138.30	9.00	4.60
10270	Green ash	22.50	13.50	30.20	FAIR	138.30	9.00	4.60
10271	Green ash	22.50	13.50	30.20	FAIR	138.30	9.00	4.60
10272	Black ash	14.20	11.00	16.60	FAIR	61.80	3.70	3.70
10273	Black ash	17.60	11.00	22.10	FAIR	89.50	5.30	4.10
10274	Green ash	22.50	13.00	30.20	FAIR	138.30	9.00	4.60
10275	Green ash	22.50	11.00	30.20	FAIR	138.30	9.00	4.60
10276	American basswood	8.40	5.00	7.50	FAIR	32.20	0.90	4.30
10277	Green ash	22.50	14.50	30.20	FAIR	138.30	9.00	4.60
10278	American elm	68.30	24.00	145.30	FAIR	714.60	52.00	4.90
10279	Green ash	22.50	12.00	30.20	FAIR	138.30	9.00	4.60
10280	Green ash	22.60	13.00	30.20	FAIR	138.30	9.00	4.60
10281	hackberry spp	5.80	5.00	6.60	FAIR	28.50	1.70	4.30
10282	cottonwood spp	51.10	21.00	72.40	FAIR	265.60	17.90	3.70
10283	cottonwood spp	40.00	18.00	46.60	FAIR	245.50	16.60	5.30
10284	Siberian elm	16.60	9.50	11.90	FAIR	51.60	3.50	4.30
10285	American elm	68.50	19.50	145.30	FAIR	714.60	52.00	4.90
10286	American elm	70.80	19.50	151.70	FAIR	746.50	54.30	4.90
10287	American elm	70.90	23.50	151.70	FAIR	746.50	54.30	4.90
10288	American elm	71.50	20.00	151.70	FAIR	754.10	54.80	5.00
10289	American elm	72.50	18.50	156.10	FAIR	768.10	55.90	4.90
10290	American elm	73.30	20.00	156.10	FAIR	768.10	55.90	4.90
10291	Boxelder	46.90	18.00	67.90	FAIR	375.00	34.30	5.50
10292	Siberian elm	16.70	8.00	11.90	FAIR	51.60	3.50	4.30
10293	American elm	75.00	19.00	160.60	FAIR	798.10	58.00	5.00
10294	American elm	75.40	23.00	162.90	FAIR	801.20	58.30	4.90
10295	American elm	77.90	21.00	167.40	FAIR	832.00	60.50	5.00
10296	American elm	78.70	18.50	169.70	FAIR	843.40	61.30	5.00
10297	American elm	79.60	22.50	172.00	FAIR	854.90	62.20	5.00
10298	Boxelder	67.70	13.50	93.30	FAIR	423.10	38.70	4.50
10299	Boxelder	51.70	14.50	73.90	FAIR	392.80	35.90	5.30
10300	Boxelder	49.00	13.00	70.90	FAIR	384.20	35.10	5.40
10301	Boxelder	98.30	15.00	103.90	FAIR	432.60	39.60	4.20
10302	Boxelder	48.20	14.00	69.40	FAIR	380.70	34.80	5.50
10303	Blue spruce	21.50	12.00	11.90	FAIR	94.40	16.00	7.90
10304	Blue spruce	23.40	13.00	13.20	FAIR	108.60	18.40	8.20
10305	Blue spruce	26.00	14.50	15.20	FAIR	132.90	22.50	8.70
10306	Blue spruce	22.80	12.00	12.60	FAIR	102.80	17.40	8.20
10307	Blue spruce	25.20	11.00	14.50	FAIR	124.40	21.10	8.60

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
10308	Blue spruce	27.00	12.00	15.90	FAIR	141.80	24.10	8.90
10309	Green ash	22.60	10.00	30.20	FAIR	138.30	9.00	4.60
10310	Silver maple	9.50	7.50	13.90	FAIR	50.20	2.60	3.60
10311	Green ash	22.70	13.00	30.20	FAIR	138.30	9.00	4.60
10312	Blue spruce	36.10	13.00	23.80	FAIR	248.20	42.10	10.40
10313	Blue spruce	32.20	12.00	20.40	FAIR	201.60	34.20	9.90
10314	cottonwood spp	50.90	17.50	72.40	FAIR	265.60	17.90	3.70
10315	cottonwood spp	32.00	16.50	31.20	FAIR	161.50	10.90	5.20
10316	Littleleaf linden	1.40	2.00	0.20	FAIR	1.20	0.10	6.20
10317	Silver maple	1.40	1.80	3.10	FAIR	9.50	0.50	3.00
10318	The David Elm	1.80	2.00	3.80	FAIR	13.10	0.90	3.40
10319	Littleleaf linden	1.40	1.80	0.20	FAIR	1.20	0.10	6.20
10320	Bur oak	1.50	1.80	3.50	FAIR	8.40	0.80	2.40
10321	hackberry spp	1.50	1.70	3.10	FAIR	13.00	0.80	4.10
10322	Bur oak	1.30	1.80	3.50	FAIR	8.40	0.80	2.40
10323	The David Elm	2.30	2.00	3.80	FAIR	13.10	0.90	3.40
10324	hackberry spp	1.60	1.70	3.10	FAIR	13.00	0.80	4.10
10325	Littleleaf linden	1.40	1.80	0.20	FAIR	1.20	0.10	6.20
10326	Silver maple	1.70	1.80	3.10	FAIR	9.50	0.50	3.00
10327	Bur oak	2.10	2.00	3.50	FAIR	8.60	0.80	2.50
10328	The David Elm	1.60	1.70	3.80	FAIR	12.60	0.90	3.30
10329	The David Elm	2.00	1.80	3.80	FAIR	12.80	0.90	3.40
10330	White spruce	19.70	13.00	9.60	FAIR	80.40	12.90	8.40
10331	White spruce	26.70	15.00	13.20	FAIR	123.90	19.90	9.40
10332	White spruce	21.60	13.00	10.80	FAIR	93.40	15.00	8.70
10333	White spruce	39.60	13.00	21.20	FAIR	244.50	39.30	11.50
10334	White spruce	34.20	13.50	18.10	FAIR	194.20	31.20	10.70
10335	White spruce	28.90	13.50	14.50	FAIR	141.70	22.80	9.80
10336	Green ash	22.70	13.00	30.20	FAIR	138.30	9.00	4.60
10337	Silver maple	1.90	2.00	3.10	FAIR	9.80	0.50	3.10
10338	Siberian crabapple	20.90	5.00	24.60	FAIR	90.20	7.80	3.70
10339	Littleleaf linden	1.80	2.00	0.20	FAIR	1.20	0.10	6.20
10340	Siberian crabapple	26.30	5.50	30.20	FAIR	114.50	9.90	3.80
10341	Bur oak	1.50	1.70	3.50	FAIR	8.30	0.80	2.40
10342	Bur oak	2.80	2.00	3.80	FAIR	9.30	0.90	2.40
10343	hackberry spp	1.30	1.70	3.10	FAIR	13.00	0.80	4.10
10344	Bur oak	2.10	1.80	3.50	FAIR	8.40	0.80	2.40
10345	hackberry spp	1.30	1.70	3.10	FAIR	13.00	0.80	4.10
10346	Siberian crabapple	24.00	7.50	28.30	FAIR	106.00	9.10	3.70
10347	Bur oak	1.70	1.70	3.50	FAIR	8.30	0.80	2.40
10348	Canada red chokecherry	19.80	9.50	23.80	FAIR	96.90	7.50	4.10
10349	Siberian crabapple	21.50	7.50	25.50	FAIR	93.50	8.10	3.70
10350	hackberry spp	1.30	1.70	3.10	FAIR	13.00	0.80	4.10
10351	Siberian crabapple	15.00	5.00	18.10	FAIR	63.20	5.40	3.50
10352	Canada red chokecherry	16.50	7.00	18.90	FAIR	71.80	5.60	3.80
10353	Boxelder	59.70	14.00	84.90	FAIR	412.40	37.70	4.90

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
10355	Blue spruce	39.90	15.00	27.30	FAIR	296.60	50.30	10.80
10356	Littleleaf linden	23.10	10.50	28.30	FAIR	138.70	10.40	4.90
10357	White spruce	36.90	10.50	19.60	FAIR	218.40	35.10	11.10
10358	Green ash	22.70	12.00	30.20	FAIR	138.30	9.00	4.60
10359	Green ash	22.80	11.00	31.20	FAIR	142.30	9.30	4.60
10360	Littleleaf linden	21.60	7.00	26.40	FAIR	125.70	9.40	4.80
10361	Blue spruce	3.30	1.80	1.80	FAIR	10.20	1.70	5.80
10362	Amur maple	5.80	3.50	7.50	FAIR	36.60	2.10	4.90
10363	Pin cherry	11.00	6.00	11.90	FAIR	40.40	1.90	3.40
10364	Populus canescens	23.20	14.00	17.30	FAIR	77.10	5.60	4.40
10365	Populus canescens	26.10	16.50	22.10	FAIR	104.40	7.50	4.70
10366	Populus canescens	29.40	16.50	26.40	FAIR	133.00	9.60	5.00
10367	Canada red chokecherry	18.50	8.00	22.10	FAIR	87.30	6.80	4.00
10368	Black ash	48.30	17.00	80.10	FAIR	341.40	20.30	4.30
10369	Black ash	28.90	17.50	43.00	FAIR	202.80	12.10	4.70
10370	Green ash	22.80	11.00	31.20	FAIR	142.30	9.30	4.60
10371	Siberian crabapple	14.00	8.00	16.60	FAIR	57.40	4.90	3.50
10372	Siberian crabapple	8.20	5.50	10.20	FAIR	33.70	2.90	3.30
10373	Silver maple	50.60	14.00	91.60	FAIR	381.40	20.10	4.20
10374	Silver maple	62.30	17.00	115.00	FAIR	478.70	25.20	4.20
10375	apple spp	10.80	6.00	13.20	FAIR	44.80	3.90	3.40
10376	Silver maple	37.30	15.50	65.00	FAIR	328.20	17.30	5.00
10377	cottonwood spp	61.60	21.00	102.10	FAIR	369.40	25.00	3.60
10378	Bur oak	2.30	2.00	3.50	FAIR	8.60	0.80	2.50
10379	Canada red chokecherry	12.80	5.50	14.50	FAIR	50.90	3.90	3.50
10380	Littleleaf linden	46.90	12.50	63.60	FAIR	366.80	27.50	5.80
10381	Littleleaf linden	31.90	10.00	43.00	FAIR	233.40	17.50	5.40
10382	American basswood	45.20	19.00	62.20	FAIR	416.70	12.20	6.70
10383	American basswood	54.30	15.50	77.00	FAIR	410.40	12.00	5.30
10384	Littleleaf linden	55.10	12.50	73.90	FAIR	421.00	31.50	5.70
10385	Boxelder	21.60	9.50	26.40	FAIR	141.50	12.90	5.40
10386	Boxelder	30.30	11.00	40.70	FAIR	240.40	22.00	5.90
10387	Boxelder	27.00	11.50	35.30	FAIR	204.30	18.70	5.80
10388	Populus canescens	14.20	10.50	8.00	FAIR	28.90	2.10	3.60
10389	Populus canescens	8.70	7.50	3.80	FAIR	12.50	0.90	3.30
10390	American elm	80.50	18.50	174.40	FAIR	866.50	63.00	5.00
10391	Littleleaf linden	15.80	9.00	15.90	FAIR	68.20	5.10	4.30
10392	Littleleaf linden	24.00	11.50	30.20	FAIR	149.40	11.20	4.90
10393	Green ash	22.90	13.50	31.20	FAIR	143.80	9.40	4.60
10394	American basswood	36.30	10.50	46.60	FAIR	314.10	9.20	6.70
10395	Littleleaf linden	23.10	11.00	28.30	FAIR	138.70	10.40	4.90
10396	American basswood	40.70	13.00	54.10	FAIR	368.90	10.80	6.80
10397	Green ash	23.00	14.50	31.20	FAIR	143.80	9.40	4.60
10398	Green ash	23.10	10.50	31.20	FAIR	143.80	9.40	4.60
10399	Green ash	23.20	12.00	31.20	FAIR	143.80	9.40	4.60
10400	Green ash	23.20	13.50	31.20	FAIR	143.80	9.40	4.60
10401	Green ash	23.30	14.50	31.20	FAIR	143.80	9.40	4.60

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
10402	Green ash	23.30	9.50	31.20	FAIR	143.80	9.40	4.60
10403	Green ash	23.40	9.50	32.20	FAIR	149.40	9.70	4.60
10404	Green ash	23.40	19.00	32.20	FAIR	149.40	9.70	4.60
10405	Green ash	23.50	9.00	32.20	FAIR	149.40	9.70	4.60
10406	Green ash	23.50	14.00	32.20	FAIR	149.40	9.70	4.60
10407	Green ash	23.50	12.00	32.20	FAIR	149.40	9.70	4.60
10408	Green ash	23.60	13.50	32.20	FAIR	149.40	9.70	4.60
10409	Green ash	23.60	11.50	32.20	FAIR	149.40	9.70	4.60
10410	Green ash	23.70	13.50	32.20	FAIR	149.40	9.70	4.60
10411	Green ash	23.70	15.50	32.20	FAIR	149.40	9.70	4.60
10412	Green ash	23.70	13.00	32.20	FAIR	149.40	9.70	4.60
10413	Green ash	23.70	13.50	32.20	FAIR	149.40	9.70	4.60
10414	Green ash	23.80	13.00	32.20	FAIR	149.40	9.70	4.60
10415	Green ash	23.90	14.00	32.20	FAIR	149.40	9.70	4.60
10416	Green ash	23.90	12.00	32.20	FAIR	149.40	9.70	4.60
10417	Green ash	24.00	11.00	33.20	FAIR	155.10	10.10	4.70
10418	Green ash	24.00	10.00	33.20	FAIR	155.10	10.10	4.70
10419	Green ash	24.00	11.00	33.20	FAIR	155.10	10.10	4.70
10420	Green ash	24.10	12.00	33.20	FAIR	155.10	10.10	4.70
10421	Green ash	24.10	13.00	33.20	FAIR	155.10	10.10	4.70
10422	Green ash	24.10	15.00	33.20	FAIR	155.10	10.10	4.70
10423	Green ash	24.10	10.00	33.20	FAIR	155.10	10.10	4.70
10424	Green ash	24.30	16.50	33.20	FAIR	155.10	10.10	4.70
10425	Green ash	24.30	15.50	33.20	FAIR	155.10	10.10	4.70
10426	Green ash	24.40	12.50	33.20	FAIR	155.10	10.10	4.70
10427	Green ash	24.40	12.50	33.20	FAIR	155.10	10.10	4.70
10428	Green ash	24.40	15.00	33.20	FAIR	155.10	10.10	4.70
10429	Green ash	24.50	10.50	33.20	FAIR	155.10	10.10	4.70
10430	Green ash	24.70	12.00	34.20	FAIR	160.80	10.50	4.70
10431	Green ash	24.70	15.00	34.20	FAIR	160.80	10.50	4.70
10432	Green ash	24.70	12.50	34.20	FAIR	160.80	10.50	4.70
10433	Green ash	24.80	12.50	34.20	FAIR	160.80	10.50	4.70
10434	Green ash	24.80	15.00	34.20	FAIR	160.80	10.50	4.70
10435	Green ash	24.80	16.50	34.20	FAIR	160.80	10.50	4.70
10436	Green ash	24.90	14.50	34.20	FAIR	160.80	10.50	4.70
10437	Green ash	25.00	14.00	34.20	FAIR	160.80	10.50	4.70
10438	Green ash	25.00	11.00	34.20	FAIR	160.80	10.50	4.70
10439	Green ash	25.00	13.00	34.20	FAIR	160.80	10.50	4.70
10440	Green ash	25.10	17.50	34.20	FAIR	162.50	10.60	4.70
10441	Green ash	25.10	10.50	34.20	FAIR	162.50	10.60	4.70
10442	Green ash	25.20	14.00	35.30	FAIR	166.70	10.90	4.70
10443	Green ash	25.20	15.50	35.30	FAIR	166.70	10.90	4.70
10444	Green ash	25.30	11.50	35.30	FAIR	166.70	10.90	4.70
10445	Green ash	25.30	15.50	35.30	FAIR	166.70	10.90	4.70
10446	Green ash	25.40	11.50	35.30	FAIR	166.70	10.90	4.70
10447	Green ash	25.40	14.50	35.30	FAIR	166.70	10.90	4.70
10448	Green ash	25.40	13.50	35.30	FAIR	166.70	10.90	4.70
10449	Green ash	25.50	13.50	35.30	FAIR	166.70	10.90	4.70

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
10450	Green ash	25.60	14.00	35.30	FAIR	166.70	10.90	4.70
10451	Green ash	25.70	15.00	35.30	FAIR	168.30	11.00	4.80
10452	Green ash	25.70	9.50	35.30	FAIR	168.30	11.00	4.80
10453	Green ash	25.70	13.00	35.30	FAIR	168.30	11.00	4.80
10454	Green ash	25.80	12.00	36.30	FAIR	172.60	11.30	4.80
10455	Green ash	25.90	16.50	36.30	FAIR	172.60	11.30	4.80
10456	Green ash	25.90	12.50	36.30	FAIR	172.60	11.30	4.80
10457	Green ash	25.90	16.00	36.30	FAIR	172.60	11.30	4.80
10458	Green ash	25.90	11.50	36.30	FAIR	172.60	11.30	4.80
10459	Green ash	26.00	12.00	36.30	FAIR	172.60	11.30	4.80
10460	Green ash	26.00	11.50	36.30	FAIR	172.60	11.30	4.80
10461	Green ash	26.20	12.50	36.30	FAIR	172.60	11.30	4.80
10462	Green ash	26.20	15.00	36.30	FAIR	172.60	11.30	4.80
10463	Green ash	26.30	14.00	36.30	FAIR	174.30	11.40	4.80
10464	Green ash	26.30	16.00	36.30	FAIR	174.30	11.40	4.80
10465	Green ash	26.30	10.00	36.30	FAIR	174.30	11.40	4.80
10466	Green ash	26.40	12.00	37.40	FAIR	178.70	11.70	4.80
10467	Green ash	26.40	13.00	37.40	FAIR	178.70	11.70	4.80
10468	Green ash	26.40	13.50	37.40	FAIR	178.70	11.70	4.80
10469	Green ash	26.50	14.50	37.40	FAIR	178.70	11.70	4.80
10470	Green ash	26.60	14.00	37.40	FAIR	178.70	11.70	4.80
10471	Green ash	26.70	13.00	37.40	FAIR	178.70	11.70	4.80
10472	Green ash	26.80	18.00	37.40	FAIR	178.70	11.70	4.80
10473	Green ash	27.10	10.50	38.50	FAIR	184.70	12.00	4.80
10474	Green ash	27.10	13.50	38.50	FAIR	184.70	12.00	4.80
10475	Green ash	27.20	11.00	38.50	FAIR	184.70	12.00	4.80
10476	Green ash	27.30	13.50	38.50	FAIR	184.70	12.00	4.80
10477	Green ash	27.30	10.50	38.50	FAIR	184.70	12.00	4.80
10478	Green ash	27.30	11.50	38.50	FAIR	184.70	12.00	4.80
10479	Green ash	27.50	13.50	38.50	FAIR	186.50	12.20	4.80
10480	Green ash	27.50	16.00	38.50	FAIR	186.50	12.20	4.80
10481	Green ash	27.60	12.00	38.50	FAIR	186.50	12.20	4.80
10482	Green ash	27.60	17.00	38.50	FAIR	186.50	12.20	4.80
10483	Green ash	27.60	12.00	38.50	FAIR	186.50	12.20	4.80
10484	Green ash	27.60	12.00	38.50	FAIR	186.50	12.20	4.80
10485	Green ash	27.70	11.00	39.60	FAIR	190.90	12.40	4.80
10486	Green ash	27.70	13.00	39.60	FAIR	190.90	12.40	4.80
10487	Green ash	27.80	12.00	39.60	FAIR	190.90	12.40	4.80
10488	Green ash	27.90	12.00	39.60	FAIR	190.90	12.40	4.80
10489	Green ash	28.20	17.50	39.60	FAIR	192.70	12.60	4.90
10490	Green ash	28.30	14.50	39.60	FAIR	192.70	12.60	4.90
10491	Green ash	28.40	13.50	40.70	FAIR	197.10	12.90	4.80
10492	Green ash	28.70	13.50	40.70	FAIR	198.90	13.00	4.90
10493	Green ash	28.80	12.50	40.70	FAIR	198.90	13.00	4.90
10494	Green ash	28.90	12.00	40.70	FAIR	198.90	13.00	4.90
10495	Green ash	28.90	12.50	40.70	FAIR	198.90	13.00	4.90
10496	Green ash	28.90	15.50	40.70	FAIR	198.90	13.00	4.90
10497	Green ash	29.20	14.00	41.90	FAIR	203.30	13.30	4.90

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
10498	Green ash	29.20	15.50	41.90	FAIR	203.30	13.30	4.90
10499	Green ash	29.30	11.00	41.90	FAIR	205.10	13.40	4.90
10500	Green ash	29.40	13.00	41.90	FAIR	205.10	13.40	4.90
10501	Green ash	29.40	11.00	41.90	FAIR	205.10	13.40	4.90
10502	Green ash	29.60	19.00	41.90	FAIR	205.10	13.40	4.90
10503	Green ash	29.70	12.00	43.00	FAIR	209.60	13.70	4.90
10504	Green ash	29.80	12.50	43.00	FAIR	209.60	13.70	4.90
10505	Green ash	29.80	17.50	43.00	FAIR	209.60	13.70	4.90
10506	Green ash	29.80	15.50	43.00	FAIR	209.60	13.70	4.90
10507	Green ash	29.90	16.00	43.00	FAIR	211.40	13.80	4.90
10508	Green ash	29.90	14.00	43.00	FAIR	211.40	13.80	4.90
10509	Green ash	30.00	16.00	43.00	FAIR	211.40	13.80	4.90
10510	Green ash	30.10	15.50	43.00	FAIR	211.40	13.80	4.90
10511	Green ash	30.20	18.50	43.00	FAIR	211.40	13.80	4.90
10512	Green ash	30.20	15.00	43.00	FAIR	211.40	13.80	4.90
10513	Green ash	30.50	11.50	44.20	FAIR	217.80	14.20	4.90
10514	Green ash	30.50	14.50	44.20	FAIR	217.80	14.20	4.90
10515	Green ash	30.60	15.00	44.20	FAIR	217.80	14.20	4.90
10516	Green ash	30.60	12.50	44.20	FAIR	217.80	14.20	4.90
10517	Green ash	30.80	15.50	44.20	FAIR	217.80	14.20	4.90
10518	Green ash	30.80	13.00	44.20	FAIR	217.80	14.20	4.90
10519	Blue spruce	13.20	7.00	6.20	FAIR	40.40	6.90	6.60
10520	Blue spruce	10.40	6.50	4.50	FAIR	28.60	4.90	6.30
10521	Blue spruce	6.40	4.00	2.80	FAIR	16.80	2.90	5.90
10522	Blue spruce	7.50	5.00	3.10	FAIR	19.30	3.30	6.10
10523	Blue spruce	10.50	6.00	4.50	FAIR	28.60	4.90	6.30
10524	Blue spruce	3.50	2.00	1.80	FAIR	10.50	1.80	6.00
10525	Blue spruce	1.00	1.50	1.80	FAIR	9.70	1.70	5.50
10526	Blue spruce	1.90	1.80	1.80	FAIR	10.20	1.70	5.80
10527	Blue spruce	2.00	1.80	1.80	FAIR	10.20	1.70	5.80
10528	Blue spruce	2.70	2.00	1.80	FAIR	10.50	1.80	6.00
10529	Blue spruce	8.70	5.00	3.80	FAIR	23.20	3.90	6.10
10530	Blue spruce	11.00	6.00	4.90	FAIR	30.90	5.20	6.30
10531	Green ash	31.10	15.00	45.40	FAIR	224.10	14.60	4.90
10532	Green ash	31.20	12.00	45.40	FAIR	224.10	14.60	4.90
10533	Green ash	31.20	18.00	45.40	FAIR	224.10	14.60	4.90
10534	Green ash	31.30	17.00	45.40	FAIR	224.10	14.60	4.90
10535	Green ash	31.40	19.00	45.40	FAIR	224.10	14.60	4.90
10536	Green ash	31.60	12.00	45.40	FAIR	224.10	14.60	4.90
10537	Green ash	31.60	15.00	45.40	FAIR	224.10	14.60	4.90
10538	Green ash	31.70	14.50	46.60	FAIR	228.50	14.90	4.90
10539	Green ash	31.70	13.00	46.60	FAIR	228.50	14.90	4.90
10540	Green ash	32.10	15.50	46.60	FAIR	230.50	15.00	4.90
10541	Green ash	32.30	13.00	46.60	FAIR	230.50	15.00	4.90
10542	Green ash	32.50	12.50	47.80	FAIR	236.80	15.40	5.00
10543	Green ash	32.60	16.00	47.80	FAIR	236.80	15.40	5.00
10544	Green ash	32.60	18.50	47.80	FAIR	236.80	15.40	5.00
10545	Green ash	32.80	17.00	47.80	FAIR	236.80	15.40	5.00

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
10546	Green ash	32.90	15.50	47.80	FAIR	236.80	15.40	5.00
10547	Green ash	32.90	17.00	47.80	FAIR	236.80	15.40	5.00
10548	Green ash	32.90	12.50	47.80	FAIR	236.80	15.40	5.00
10549	Green ash	33.00	15.00	47.80	FAIR	238.80	15.60	5.00
10550	Green ash	33.10	17.50	49.00	FAIR	243.10	15.90	5.00
10551	Green ash	33.30	15.50	49.00	FAIR	243.10	15.90	5.00
10552	Green ash	33.30	11.00	49.00	FAIR	243.10	15.90	5.00
10553	Green ash	33.40	17.00	49.00	FAIR	243.10	15.90	5.00
10554	Green ash	33.70	11.00	49.00	FAIR	245.10	16.00	5.00
10555	Green ash	33.70	17.50	49.00	FAIR	245.10	16.00	5.00
10556	Green ash	33.80	15.50	50.30	FAIR	249.50	16.30	5.00
10557	Siberian elm	16.70	14.50	11.90	FAIR	51.60	3.50	4.30
10558	Siberian elm	16.80	8.50	11.90	FAIR	51.60	3.50	4.30
10559	Siberian elm	17.20	10.00	12.60	FAIR	54.70	3.70	4.40
10560	Siberian elm	17.20	7.00	12.60	FAIR	54.70	3.70	4.40
10561	Siberian elm	17.20	11.00	12.60	FAIR	54.70	3.70	4.40
10562	Siberian elm	17.30	8.00	12.60	FAIR	54.70	3.70	4.40
10563	Siberian elm	17.30	11.50	12.60	FAIR	54.70	3.70	4.40
10564	Siberian elm	17.50	7.50	13.20	FAIR	57.20	3.90	4.30
10565	Siberian elm	17.50	11.50	13.20	FAIR	57.20	3.90	4.30
10566	Siberian elm	18.20	10.00	13.90	FAIR	61.40	4.20	4.40
10567	Siberian elm	18.40	5.50	13.90	FAIR	60.60	4.10	4.40
10568	Siberian elm	18.40	7.00	13.90	FAIR	61.40	4.20	4.40
10569	Siberian elm	18.90	9.00	14.50	FAIR	64.90	4.40	4.50
10570	Siberian elm	19.30	10.00	15.20	FAIR	68.50	4.70	4.50
10571	Green ash	33.80	21.00	50.30	FAIR	249.50	16.30	5.00
10572	Siberian elm	19.30	10.50	15.20	FAIR	68.50	4.70	4.50
10573	Siberian elm	19.40	7.50	15.20	FAIR	68.50	4.70	4.50
10574	Siberian elm	20.30	8.50	16.60	FAIR	76.20	5.20	4.60
10575	Siberian elm	20.60	14.00	17.30	FAIR	79.30	5.40	4.60
10576	Siberian elm	20.60	14.00	17.30	FAIR	79.30	5.40	4.60
10577	Siberian elm	20.70	12.50	17.30	FAIR	79.30	5.40	4.60
10578	Showy mountain ash	19.60	10.50	22.90	FAIR	87.60	7.00	3.80
10579	Siberian elm	21.00	7.50	17.30	FAIR	80.30	5.50	4.60
10580	Siberian elm	21.20	12.00	18.10	FAIR	83.40	5.70	4.60
10581	Siberian elm	21.40	7.00	18.10	FAIR	83.40	5.70	4.60
10582	Populus canescens	5.30	5.00	2.00	FAIR	6.70	0.50	3.30
10583	Populus canescens	3.90	5.00	1.50	FAIR	5.30	0.40	3.40
10584	Populus canescens	8.20	7.50	3.50	FAIR	11.30	0.80	3.30
10585	Populus canescens	9.50	6.00	4.50	FAIR	14.90	1.10	3.30
10586	Populus canescens	4.00	4.50	1.50	FAIR	5.30	0.40	3.40
10587	Populus canescens	3.80	3.50	1.50	FAIR	5.20	0.40	3.40
10588	Populus canescens	8.50	7.50	3.80	FAIR	12.30	0.90	3.20
10589	White spruce	17.30	12.00	8.00	FAIR	63.60	10.20	7.90
10590	Siberian elm	21.60	13.00	18.10	FAIR	84.50	5.80	4.70
10591	Siberian elm	21.70	9.00	18.90	FAIR	87.70	6.00	4.70
10592	Siberian elm	21.80	14.50	18.90	FAIR	87.70	6.00	4.70

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
10593	Siberian elm	21.90	12.00	18.90	FAIR	87.70	6.00	4.70
10594	Siberian elm	22.10	14.00	18.90	FAIR	88.80	6.00	4.70
10595	Siberian elm	22.20	13.00	19.60	FAIR	92.20	6.30	4.70
10596	Siberian elm	22.30	11.00	19.60	FAIR	92.20	6.30	4.70
10597	Siberian elm	22.50	11.00	19.60	FAIR	92.20	6.30	4.70
10598	Siberian elm	22.60	14.00	19.60	FAIR	93.30	6.40	4.80
10599	Siberian elm	22.90	13.00	20.40	FAIR	96.70	6.60	4.70
10600	Siberian elm	23.10	12.00	20.40	FAIR	96.70	6.60	4.70
10601	Siberian elm	23.10	15.00	20.40	FAIR	96.70	6.60	4.70
10602	Siberian elm	23.10	13.50	20.40	FAIR	96.70	6.60	4.70
10603	Siberian elm	23.20	13.00	20.40	FAIR	97.90	6.70	4.80
10604	Freeman maple	2.40	2.00	4.50	FAIR	14.90	0.80	3.30
10605	cottonwood spp	3.80	4.50	1.50	FAIR	5.20	0.30	3.40
10606	Siberian elm	23.20	16.00	20.40	FAIR	97.90	6.70	4.80
10607	Green ash	33.90	16.00	50.30	FAIR	249.50	16.30	5.00
10608	seabuckthorn spp	5.90	4.00	4.50	FAIR	13.20	1.00	2.90
10609	seabuckthorn spp	4.00	3.00	2.80	FAIR	8.80	0.70	3.10
10610	Siberian elm	23.40	11.00	21.20	FAIR	101.50	6.90	4.80
10611	Siberian elm	23.80	9.00	22.10	FAIR	106.30	7.20	4.80
10612	Siberian elm	23.80	12.50	22.10	FAIR	106.30	7.20	4.80
10613	Siberian elm	23.90	15.50	22.10	FAIR	106.30	7.20	4.80
10614	Balm-of-gilead	12.70	13.00	6.60	FAIR	22.90	1.70	3.50
10615	Balm-of-gilead	12.70	13.00	6.60	FAIR	22.90	1.70	3.50
10616	Siberian elm	24.40	15.50	22.90	FAIR	111.40	7.60	4.90
10617	Siberian elm	24.80	12.50	22.90	FAIR	111.40	7.60	4.90
10618	Siberian elm	25.50	12.00	24.60	FAIR	120.40	8.20	4.90
10619	Siberian elm	25.50	13.00	24.60	FAIR	120.40	8.20	4.90
10620	Siberian elm	25.70	11.00	24.60	FAIR	121.80	8.30	4.90
10621	Siberian elm	25.80	14.50	24.60	FAIR	121.80	8.30	4.90
10622	Siberian elm	26.30	10.50	25.50	FAIR	127.20	8.70	5.00
10623	Siberian elm	26.40	11.50	26.40	FAIR	131.30	8.90	5.00
10624	Siberian elm	26.60	12.00	26.40	FAIR	131.30	8.90	5.00
10625	Siberian elm	26.70	26.00	26.40	FAIR	131.30	8.90	5.00
10626	Siberian elm	27.20	13.50	27.30	FAIR	136.90	9.30	5.00
10627	Siberian elm	27.30	9.50	27.30	FAIR	136.90	9.30	5.00
10628	Siberian elm	27.30	13.00	27.30	FAIR	136.90	9.30	5.00
10629	Siberian elm	27.40	13.50	27.30	FAIR	136.90	9.30	5.00
10630	Siberian elm	27.50	9.00	28.30	FAIR	142.70	9.70	5.00
10631	Siberian elm	27.50	13.50	28.30	FAIR	142.70	9.70	5.00
10632	Siberian elm	27.50	13.50	28.30	FAIR	142.70	9.70	5.00
10633	Siberian elm	27.60	12.50	28.30	FAIR	142.70	9.70	5.00
10634	Siberian elm	28.20	12.50	29.20	FAIR	148.60	10.10	5.10
10635	Siberian elm	28.70	17.50	30.20	FAIR	153.00	10.40	5.10
10636	Siberian elm	29.00	14.00	30.20	FAIR	154.60	10.50	5.10
10637	Siberian elm	29.20	11.00	31.20	FAIR	159.10	10.80	5.10
10638	Siberian elm	29.80	15.00	32.20	FAIR	165.30	11.30	5.10
10639	Siberian elm	30.00	13.00	32.20	FAIR	165.30	11.30	5.10
10640	Siberian elm	30.00	14.00	32.20	FAIR	165.30	11.30	5.10

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
10641	Siberian elm	30.10	11.50	32.20	FAIR	167.00	11.40	5.20
10642	Siberian elm	30.20	17.00	33.20	FAIR	171.60	11.70	5.20
10643	Siberian elm	30.30	13.00	33.20	FAIR	171.60	11.70	5.20
10644	Siberian elm	30.40	13.00	33.20	FAIR	171.60	11.70	5.20
10645	Siberian elm	30.60	14.50	33.20	FAIR	171.60	11.70	5.20
10646	Siberian elm	30.80	13.50	34.20	FAIR	178.00	12.10	5.20
10647	Siberian elm	31.40	12.00	35.30	FAIR	184.50	12.60	5.20
10648	Siberian elm	31.50	13.50	35.30	FAIR	184.50	12.60	5.20
10649	Siberian elm	31.60	11.50	35.30	FAIR	184.50	12.60	5.20
10650	Siberian elm	31.70	13.50	35.30	FAIR	184.50	12.60	5.20
10651	Siberian elm	31.80	12.00	36.30	FAIR	189.20	12.90	5.20
10652	Siberian elm	32.00	17.50	36.30	FAIR	191.10	13.00	5.30
10653	Siberian elm	32.20	14.50	36.30	FAIR	191.10	13.00	5.30
10654	Siberian elm	32.40	16.50	37.40	FAIR	195.80	13.30	5.20
10655	Siberian elm	32.80	12.50	38.50	FAIR	202.50	13.80	5.30
10656	Siberian elm	32.80	17.00	38.50	FAIR	202.50	13.80	5.30
10657	Siberian elm	33.70	16.00	39.60	FAIR	209.30	14.30	5.30
10658	Siberian elm	33.70	13.50	39.60	FAIR	209.30	14.30	5.30
10659	Siberian elm	33.80	16.50	39.60	FAIR	209.30	14.30	5.30
10660	Siberian elm	33.90	16.50	40.70	FAIR	214.20	14.60	5.30
10661	Siberian elm	33.90	13.50	40.70	FAIR	214.20	14.60	5.30
10662	Siberian elm	33.90	24.50	40.70	FAIR	214.20	14.60	5.30
10663	Siberian elm	34.20	24.50	40.70	FAIR	216.20	14.70	5.30
10664	Siberian elm	34.50	17.00	41.90	FAIR	221.00	15.10	5.30
10665	Siberian elm	34.60	11.50	41.90	FAIR	221.00	15.10	5.30
10666	Siberian elm	34.60	17.00	41.90	FAIR	221.00	15.10	5.30
10667	Siberian elm	34.80	16.00	41.90	FAIR	223.00	15.20	5.30
10668	Siberian elm	35.00	10.00	43.00	FAIR	227.90	15.50	5.30
10669	Siberian elm	35.10	17.00	43.00	FAIR	227.90	15.50	5.30
10670	Siberian elm	35.30	18.50	43.00	FAIR	227.90	15.50	5.30
10671	Siberian elm	35.40	16.50	43.00	FAIR	230.00	15.70	5.30
10672	Siberian elm	36.40	17.00	45.40	FAIR	241.80	16.50	5.30
10673	Siberian elm	37.10	16.50	47.80	FAIR	253.70	17.30	5.30
10674	Siberian elm	37.70	17.00	49.00	FAIR	260.70	17.80	5.30
10675	Siberian elm	38.20	14.50	50.30	FAIR	265.50	18.10	5.30
10676	Siberian elm	38.60	11.00	50.30	FAIR	267.60	18.20	5.30
10677	Siberian elm	39.00	24.00	51.50	FAIR	274.60	18.70	5.30
10678	Siberian elm	39.10	18.50	51.50	FAIR	274.60	18.70	5.30
10679	Siberian elm	39.50	19.50	52.80	FAIR	279.30	19.00	5.30
10680	Siberian elm	39.80	16.50	54.10	FAIR	286.20	19.50	5.30
10681	Siberian elm	40.20	23.50	54.10	FAIR	286.20	19.50	5.30
10682	Siberian elm	42.00	27.50	59.40	FAIR	310.90	21.20	5.20
10683	Siberian elm	45.20	15.00	67.90	FAIR	344.10	23.40	5.10
10684	Siberian elm	45.60	28.00	69.40	FAIR	348.00	23.70	5.00
10685	Siberian elm	46.10	26.00	70.90	FAIR	353.70	24.10	5.00
10686	Siberian elm	46.20	16.00	70.90	FAIR	353.70	24.10	5.00
10687	Siberian elm	46.20	17.00	70.90	FAIR	353.70	24.10	5.00
10688	Siberian elm	46.30	15.00	70.90	FAIR	353.70	24.10	5.00

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
10689	Siberian elm	47.50	15.00	73.90	FAIR	364.40	24.80	4.90
10690	Siberian elm	47.70	15.00	75.40	FAIR	367.80	25.10	4.90
10691	Siberian elm	48.40	16.00	77.00	FAIR	372.80	25.40	4.80
10692	Siberian elm	48.90	23.00	78.50	FAIR	377.60	25.70	4.80
10693	Siberian elm	51.20	16.00	84.90	FAIR	393.20	26.80	4.60
10694	Siberian elm	51.40	17.00	86.60	FAIR	395.70	26.90	4.60
10695	Siberian elm	52.60	21.00	89.90	FAIR	401.40	27.30	4.50
10696	Siberian elm	53.30	16.00	91.60	FAIR	404.70	27.60	4.40
10697	Siberian elm	54.60	20.50	96.80	FAIR	412.00	28.10	4.30
10698	Populus canescens	6.70	8.50	2.80	FAIR	9.20	0.70	3.20
10699	Populus canescens	8.90	4.00	4.20	FAIR	13.50	1.00	3.30
10700	Populus canescens	7.50	7.00	3.10	FAIR	10.20	0.70	3.20
10701	Populus canescens	9.80	6.50	4.50	FAIR	14.90	1.10	3.30
10702	Populus canescens	6.30	5.50	2.50	FAIR	8.20	0.60	3.20
10703	Populus canescens	5.00	4.00	2.00	FAIR	6.60	0.50	3.30
10704	Populus canescens	9.10	7.00	4.20	FAIR	13.50	1.00	3.30
10705	Populus canescens	4.00	4.00	1.50	FAIR	5.30	0.40	3.40
10706	Populus canescens	6.70	5.00	2.80	FAIR	9.20	0.70	3.20
10707	Populus canescens	11.70	9.00	5.70	FAIR	19.60	1.40	3.40
10708	Populus canescens	5.60	5.00	2.30	FAIR	7.40	0.50	3.30
10709	Populus canescens	5.40	5.50	2.00	FAIR	6.80	0.50	3.40
10710	Populus canescens	12.80	13.00	6.60	FAIR	23.30	1.70	3.50
10711	Populus canescens	6.50	5.50	2.50	FAIR	8.40	0.60	3.30
10712	Populus canescens	11.40	8.00	5.70	FAIR	19.30	1.40	3.40
10713	Populus canescens	5.00	4.50	2.00	FAIR	6.60	0.50	3.30
10714	Populus canescens	7.70	6.50	3.10	FAIR	10.40	0.70	3.30
10715	Populus canescens	5.80	4.50	2.30	FAIR	7.50	0.50	3.30
10716	Blue spruce	8.80	6.50	3.80	FAIR	23.20	3.90	6.10
10717	Blue spruce	19.50	10.00	10.20	FAIR	76.90	13.00	7.60
10718	Siberian elm	56.60	18.50	102.10	FAIR	417.60	28.40	4.10
10719	Boxelder	15.00	6.50	17.30	FAIR	80.50	7.40	4.60
10720	Green ash	34.00	16.00	50.30	FAIR	249.50	16.30	5.00
10721	Green ash	34.10	16.50	50.30	FAIR	249.50	16.30	5.00
10722	Green ash	34.20	14.00	50.30	FAIR	249.50	16.30	5.00
10723	Green ash	34.30	18.50	50.30	FAIR	251.40	16.40	5.00
10724	Green ash	34.30	16.00	50.30	FAIR	251.40	16.40	5.00
10725	Green ash	34.50	14.50	51.50	FAIR	255.70	16.70	5.00
10726	Green ash	34.60	15.00	51.50	FAIR	255.70	16.70	5.00
10727	Green ash	34.60	16.50	51.50	FAIR	255.70	16.70	5.00
10728	Green ash	34.90	14.50	51.50	FAIR	255.70	16.70	5.00
10729	Green ash	35.30	15.50	52.80	FAIR	262.00	17.10	5.00
10730	Green ash	35.30	15.00	52.80	FAIR	262.00	17.10	5.00
10731	Siberian elm	60.30	21.00	115.00	FAIR	424.70	28.90	3.70
10732	Balm-of-gilead	24.60	17.00	19.60	FAIR	90.10	6.50	4.60
10733	Balm-of-gilead	26.40	17.00	22.10	FAIR	104.40	7.50	4.70
10734	Balm-of-gilead	19.70	15.00	13.20	FAIR	54.20	3.90	4.10
10735	Green ash	35.40	15.50	52.80	FAIR	262.00	17.10	5.00
10736	Balm-of-gilead	24.10	15.50	18.90	FAIR	86.00	6.20	4.60

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
10737	Balm-of-gilead	26.00	16.00	21.20	FAIR	99.90	7.20	4.70
10738	Green ash	35.60	12.00	52.80	FAIR	264.00	17.20	5.00
10739	Green ash	35.70	11.00	52.80	FAIR	264.00	17.20	5.00
10740	Green ash	36.00	13.00	54.10	FAIR	268.20	17.50	5.00
10741	Green ash	36.10	16.00	54.10	FAIR	268.20	17.50	5.00
10742	Green ash	36.30	16.00	54.10	FAIR	270.20	17.60	5.00
10743	Boxelder	31.60	16.00	43.00	FAIR	255.20	23.40	5.90
10744	Boxelder	41.00	10.00	58.10	FAIR	335.00	30.60	5.80
10745	Boxelder	43.20	15.50	62.20	FAIR	354.90	32.50	5.70
10746	Boxelder	41.20	13.50	58.10	FAIR	339.70	31.10	5.80
10747	Green ash	36.80	15.00	55.40	FAIR	274.30	17.90	4.90
10748	Green ash	37.00	14.50	55.40	FAIR	276.30	18.00	5.00
10749	hackberry spp	1.80	1.50	3.10	FAIR	12.80	0.80	4.10
10750	Bur oak	2.10	3.50	3.50	FAIR	9.10	0.90	2.60
10751	hackberry spp	8.30	6.00	9.60	FAIR	43.70	2.60	4.50
10752	Green ash	37.10	13.00	55.40	FAIR	276.30	18.00	5.00
10753	Bur oak	4.50	4.00	4.90	FAIR	13.00	1.30	2.60
10754	hackberry spp	3.80	4.00	4.20	FAIR	17.40	1.00	4.20
10755	Bur oak	14.10	8.00	15.90	FAIR	52.00	5.10	3.30
10756	Green ash	37.30	15.00	56.70	FAIR	280.40	18.30	4.90
10757	Green ash	37.50	17.50	56.70	FAIR	280.40	18.30	4.90
10758	American elm	87.70	22.00	188.70	FAIR	937.70	68.20	5.00
10759	American elm	#####	22.00	206.10	FAIR	1024.30	74.50	5.00
10760	Bur oak	2.50	3.00	3.50	FAIR	9.10	0.90	2.60
10761	Green ash	37.60	17.50	56.70	FAIR	280.40	18.30	4.90
10762	Green ash	37.60	14.50	56.70	FAIR	280.40	18.30	4.90
10763	cottonwood spp	55.90	19.00	84.90	FAIR	311.70	21.10	3.70
10764	cottonwood spp	58.30	19.00	93.30	FAIR	337.70	22.80	3.60
10765	alder spp	16.70	6.50	21.20	FAIR	92.40	5.10	4.30
10766	American basswood	15.40	7.50	15.20	FAIR	74.80	2.20	4.90
10767	Littleleaf linden	21.30	7.50	25.50	FAIR	121.50	9.10	4.80
10768	cottonwood spp	41.90	19.00	50.30	FAIR	186.90	12.60	3.70
10769	White spruce	19.70	12.50	9.60	FAIR	80.40	12.90	8.40
10770	Blue spruce	21.90	14.00	11.90	FAIR	95.80	16.30	8.00
10771	Blue spruce	16.00	11.00	8.00	FAIR	56.40	9.60	7.00
10772	Boxelder	17.00	8.00	19.60	FAIR	96.00	8.80	4.90
10773	Boxelder	16.60	8.00	19.60	FAIR	94.80	8.70	4.80
10774	Amur maple	11.40	8.00	14.50	FAIR	83.90	4.70	5.80
10775	Amur maple	7.50	7.50	9.60	FAIR	49.20	2.80	5.10
10776	Canada red chokecherry	5.70	6.50	6.60	FAIR	20.10	1.60	3.00
10777	Canada red chokecherry	5.60	3.00	6.60	FAIR	19.90	1.50	3.00
10778	Siberian elm	62.10	18.00	122.70	FAIR	425.10	29.00	3.50
10779	Scots pine	25.70	13.00	19.60	FAIR	95.40	9.20	4.90
10780	Green ash	37.70	16.00	56.70	FAIR	282.30	18.40	5.00
10781	seabuckthorn spp	1.10	2.00	1.80	FAIR	6.10	0.50	3.40
10782	Boxelder	12.90	10.50	14.50	FAIR	64.10	5.90	4.40

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
10784	Siberian elm	70.90	15.00	156.10	FAIR	672.90	45.80	4.30
10785	Boxelder	13.10	11.00	14.50	FAIR	64.10	5.90	4.40
10786	Boxelder	17.90	11.50	21.20	FAIR	105.70	9.70	5.00
10787	Green ash	37.90	16.50	56.70	FAIR	282.30	18.40	5.00
10788	Siberian elm	76.90	22.50	183.90	FAIR	792.30	54.00	4.30
10789	Boxelder	15.50	11.00	18.10	FAIR	84.70	7.70	4.70
10790	Boxelder	11.50	9.00	12.60	FAIR	53.30	4.90	4.20
10791	Boxelder	15.90	11.00	18.10	FAIR	85.80	7.80	4.70
10792	Boxelder	15.40	9.50	17.30	FAIR	81.50	7.50	4.70
10793	Green ash	38.00	16.50	56.70	FAIR	282.30	18.40	5.00
10794	Boxelder	12.60	8.00	13.90	FAIR	60.60	5.50	4.40
10795	Populus canescens	15.40	12.00	9.10	FAIR	33.40	2.40	3.70
10796	Populus canescens	12.50	8.50	6.60	FAIR	22.90	1.70	3.50
10797	Populus canescens	10.50	8.50	4.90	FAIR	16.60	1.20	3.40
10798	Populus canescens	12.20	11.00	6.20	FAIR	21.40	1.50	3.50
10799	Populus canescens	8.40	7.50	3.80	FAIR	12.30	0.90	3.20
10800	Populus canescens	15.70	11.50	9.10	FAIR	33.90	2.40	3.70
10801	Populus canescens	10.10	8.00	4.90	FAIR	16.10	1.20	3.30
10802	Tamarack	35.10	16.00	29.20	FAIR	258.20	12.00	8.80
10803	Tamarack	28.00	13.00	21.20	FAIR	171.50	7.90	8.10
10804	Tamarack	37.20	15.00	31.20	FAIR	281.00	13.00	9.00
10805	Tamarack	34.00	15.50	28.30	FAIR	245.80	11.40	8.70
10806	Tamarack	31.10	13.50	24.60	FAIR	206.80	9.60	8.40
10807	Tamarack	31.00	14.00	24.60	FAIR	206.80	9.60	8.40
10808	Green ash	38.30	15.00	58.10	FAIR	288.30	18.80	5.00
10809	Green ash	38.40	18.50	58.10	FAIR	288.30	18.80	5.00
10810	Green ash	38.40	18.50	58.10	FAIR	288.30	18.80	5.00
10811	American basswood	14.50	6.50	13.90	FAIR	66.90	2.00	4.80
10812	Canada red chokecherry	8.80	5.50	9.60	FAIR	31.10	2.40	3.20
10813	Green ash	39.60	17.50	60.80	FAIR	298.00	19.40	4.90
10814	Green ash	39.60	17.00	60.80	FAIR	298.00	19.40	4.90
10815	Green ash	39.70	15.50	60.80	FAIR	300.00	19.60	4.90
10816	Green ash	39.80	19.00	60.80	FAIR	300.00	19.60	4.90
10817	Green ash	39.80	20.00	60.80	FAIR	300.00	19.60	4.90
10818	Green ash	40.20	15.50	60.80	FAIR	300.00	19.60	4.90
10819	Green ash	40.30	15.00	62.20	FAIR	303.70	19.80	4.90
10820	Green ash	40.30	13.50	62.20	FAIR	303.70	19.80	4.90
10821	Green ash	40.50	16.50	62.20	FAIR	305.60	19.90	4.90
10822	Green ash	40.50	17.00	62.20	FAIR	305.60	19.90	4.90
10823	Green ash	40.60	19.00	62.20	FAIR	305.60	19.90	4.90
10824	Green ash	40.70	20.50	62.20	FAIR	305.60	19.90	4.90
10825	Green ash	41.30	15.50	63.60	FAIR	311.20	20.30	4.90
10826	Green ash	41.30	19.00	63.60	FAIR	311.20	20.30	4.90
10827	Green ash	41.60	15.00	63.60	FAIR	311.20	20.30	4.90
10828	Green ash	41.60	21.00	63.60	FAIR	311.20	20.30	4.90
10829	Green ash	42.10	16.00	65.00	FAIR	316.60	20.60	4.90
10830	Green ash	42.30	18.00	65.00	FAIR	316.60	20.60	4.90

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
10831	Green ash	42.50	16.00	65.00	FAIR	316.60	20.60	4.90
10832	Green ash	42.50	18.50	65.00	FAIR	316.60	20.60	4.90
10833	Green ash	42.50	17.50	65.00	FAIR	316.60	20.60	4.90
10834	Green ash	42.70	15.50	66.50	FAIR	321.90	21.00	4.80
10835	Green ash	42.90	18.50	66.50	FAIR	321.90	21.00	4.80
10836	Green ash	43.00	16.50	66.50	FAIR	321.90	21.00	4.80
10837	Green ash	43.10	16.00	66.50	FAIR	321.90	21.00	4.80
10838	Green ash	43.10	17.50	66.50	FAIR	321.90	21.00	4.80
10839	Green ash	43.10	19.00	66.50	FAIR	321.90	21.00	4.80
10840	Silver maple	35.50	13.50	60.80	FAIR	309.90	16.30	5.10
10841	Green ash	43.50	20.50	67.90	FAIR	327.00	21.30	4.80
10842	Green ash	44.10	17.00	69.40	FAIR	332.00	21.70	4.80
10843	Green ash	44.20	16.00	69.40	FAIR	332.00	21.70	4.80
10844	Green ash	44.40	17.00	69.40	FAIR	332.00	21.70	4.80
10845	Green ash	44.70	18.50	69.40	FAIR	333.80	21.80	4.80
10846	Green ash	45.10	19.00	70.90	FAIR	336.80	22.00	4.80
10847	Littleleaf linden	17.50	6.50	18.90	FAIR	83.40	6.20	4.40
10848	Green ash	45.20	21.00	70.90	FAIR	336.80	22.00	4.80
10849	Green ash	45.30	15.50	70.90	FAIR	336.80	22.00	4.80
10850	Green ash	45.30	15.00	70.90	FAIR	336.80	22.00	4.80
10851	Green ash	45.40	15.50	70.90	FAIR	336.80	22.00	4.80
10852	Green ash	45.40	18.50	70.90	FAIR	336.80	22.00	4.80
10853	Green ash	46.20	18.50	72.40	FAIR	343.10	22.40	4.70
10854	Green ash	46.30	17.00	72.40	FAIR	343.10	22.40	4.70
10855	Green ash	46.50	19.50	73.90	FAIR	345.80	22.60	4.70
10856	Green ash	46.70	18.50	73.90	FAIR	345.80	22.60	4.70
10857	apple spp	3.80	4.50	4.90	FAIR	16.20	1.40	3.30
10858	Green ash	47.50	19.00	75.40	FAIR	350.10	22.80	4.60
10859	Bur oak	9.10	5.50	9.60	FAIR	27.70	2.70	2.90
10860	Green ash	47.50	21.50	75.40	FAIR	350.10	22.80	4.60
10861	Green ash	47.60	16.50	75.40	FAIR	350.10	22.80	4.60
10862	Green ash	47.60	19.00	75.40	FAIR	350.10	22.80	4.60
10863	Green ash	47.70	20.50	75.40	FAIR	351.80	22.90	4.70
10864	Green ash	47.90	15.50	75.40	FAIR	351.80	22.90	4.70
10865	Green ash	48.10	16.50	77.00	FAIR	354.20	23.10	4.60
10866	Green ash	48.10	19.00	77.00	FAIR	354.20	23.10	4.60
10867	Green ash	48.50	16.00	77.00	FAIR	355.80	23.20	4.60
10868	Green ash	48.50	19.50	77.00	FAIR	355.80	23.20	4.60
10869	Green ash	48.80	17.00	78.50	FAIR	358.10	23.40	4.60
10870	Bur oak	1.80	2.50	3.50	FAIR	9.10	0.90	2.60
10871	Northern pin oak	3.90	3.00	4.50	FAIR	11.80	1.20	2.60
10872	Blue spruce	20.80	6.50	11.30	FAIR	85.40	14.50	7.50
10873	Green ash	49.10	17.00	78.50	FAIR	358.10	23.40	4.60
10874	Green ash	49.70	15.00	80.10	FAIR	361.70	23.60	4.50
10875	Green ash	49.70	19.50	80.10	FAIR	361.70	23.60	4.50
10876	Green ash	49.80	20.00	80.10	FAIR	361.70	23.60	4.50
10877	Populus canescens	19.80	11.00	13.90	FAIR	56.40	4.10	4.10
10878	Populus canescens	20.50	15.00	14.50	FAIR	60.40	4.40	4.20

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
10879	Populus canescens	20.30	15.00	13.90	FAIR	58.00	4.20	4.20
10880	Populus canescens	17.90	15.50	11.30	FAIR	44.40	3.20	3.90
10881	Populus canescens	17.60	13.50	11.30	FAIR	43.80	3.20	3.90
10882	Populus canescens	18.10	14.50	11.90	FAIR	47.10	3.40	3.90
10883	Populus canescens	19.40	16.00	13.20	FAIR	53.40	3.90	4.00
10884	Populus canescens	22.40	17.00	16.60	FAIR	72.40	5.20	4.40
10885	Populus canescens	12.50	7.50	6.60	FAIR	22.90	1.70	3.50
10886	Populus canescens	19.10	16.50	12.60	FAIR	51.30	3.70	4.10
10887	Populus canescens	14.50	7.50	8.00	FAIR	29.40	2.10	3.70
10888	Populus canescens	18.10	16.50	11.90	FAIR	47.10	3.40	3.90
10889	Populus canescens	23.90	17.50	18.90	FAIR	84.90	6.10	4.50
10890	Populus canescens	18.40	13.00	11.90	FAIR	47.80	3.40	4.00
10891	Populus canescens	14.10	10.00	8.00	FAIR	28.50	2.10	3.50
10892	Populus canescens	15.80	10.00	9.60	FAIR	35.60	2.60	3.70
10893	Populus canescens	16.80	13.50	10.20	FAIR	38.90	2.80	3.80
10894	Populus canescens	11.10	8.50	5.30	FAIR	17.90	1.30	3.40
10895	White spruce	22.30	12.50	10.80	FAIR	93.40	15.00	8.70
10896	White spruce	24.40	16.00	11.90	FAIR	107.80	17.30	9.00
10897	White spruce	17.30	12.00	8.00	FAIR	63.60	10.20	7.90
10898	cedar spp	13.80	8.00	4.20	FAIR	27.70	4.30	6.70
10899	cedar spp	7.10	5.00	1.80	FAIR	12.00	1.90	6.80
10900	White spruce	32.50	16.00	16.60	FAIR	171.80	27.60	10.30
10901	White spruce	27.10	14.50	13.90	FAIR	132.60	21.30	9.60
10902	White spruce	18.00	10.00	8.60	FAIR	68.90	11.10	8.10
10903	White spruce	16.80	10.50	8.00	FAIR	63.60	10.20	7.90
10904	Green ash	49.80	16.50	80.10	FAIR	361.70	23.60	4.50
10905	Green ash	50.00	19.00	80.10	FAIR	363.20	23.70	4.50
10906	Green ash	50.40	18.00	80.10	FAIR	363.20	23.70	4.50
10907	Green ash	50.90	19.00	81.70	FAIR	366.70	23.90	4.50
10908	Green ash	51.60	17.00	83.30	FAIR	369.90	24.10	4.40
10909	Green ash	51.70	19.50	83.30	FAIR	369.90	24.10	4.40
10910	Green ash	51.80	16.50	83.30	FAIR	369.90	24.10	4.40
10911	Green ash	52.20	17.50	84.90	FAIR	371.50	24.20	4.40
10912	Green ash	52.70	17.50	84.90	FAIR	372.90	24.30	4.40
10913	Green ash	52.90	18.50	86.60	FAIR	374.40	24.40	4.30
10914	Green ash	53.10	16.50	86.60	FAIR	375.70	24.50	4.30
10915	Scots pine	7.40	4.50	3.80	FAIR	14.60	1.40	3.80
10916	Green ash	53.50	19.50	86.60	FAIR	375.70	24.50	4.30
10917	Scots pine	18.30	15.00	12.60	FAIR	53.90	5.20	4.30
10918	Green ash	53.70	16.50	86.60	FAIR	375.70	24.50	4.30
10919	Scots pine	24.60	15.00	18.90	FAIR	89.80	8.70	4.80
10920	Green ash	53.70	19.00	86.60	FAIR	375.70	24.50	4.30
10921	Scots pine	26.40	15.00	20.40	FAIR	100.00	9.60	4.90
10922	Quaking aspen	14.00	11.00	6.60	FAIR	17.70	1.40	2.70
10923	Green ash	54.00	15.50	88.20	FAIR	378.20	24.70	4.30
10924	Scots pine	19.30	10.50	13.20	FAIR	57.70	5.60	4.40
10925	Green ash	54.30	19.50	88.20	FAIR	358.60	23.40	4.10
10926	Scots pine	8.80	5.50	4.90	FAIR	18.60	1.80	3.80

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
10927	Green ash	54.80	12.50	89.90	FAIR	365.40	23.80	4.10
10928	Scots pine	15.30	9.50	10.20	FAIR	41.40	4.00	4.10
10929	Green ash	54.90	16.50	89.90	FAIR	365.40	23.80	4.10
10930	Scots pine	20.30	14.00	14.50	FAIR	64.50	6.20	4.40
10931	Green ash	55.60	19.00	91.60	FAIR	372.20	24.30	4.10
10932	Scots pine	12.50	12.00	7.50	FAIR	29.60	2.90	3.90
10933	Green ash	56.30	19.50	93.30	FAIR	379.10	24.70	4.10
10934	Scots pine	11.70	10.00	7.10	FAIR	27.30	2.60	3.90
10935	Scots pine	25.50	17.00	19.60	FAIR	94.30	9.10	4.80
10936	Green ash	58.00	20.50	96.80	FAIR	393.20	25.60	4.10
10937	Scots pine	17.20	15.50	11.30	FAIR	47.90	4.60	4.20
10938	Green ash	59.30	17.00	98.50	FAIR	400.30	26.10	4.10
10939	serviceberry spp	2.20	2.00	3.50	FAIR	7.90	0.60	2.30
10940	Green ash	60.30	22.00	100.30	FAIR	407.50	26.60	4.10
10941	Boxelder	19.40	9.50	23.80	FAIR	122.80	11.20	5.20
10942	Scots pine	21.30	15.50	15.20	FAIR	68.80	6.60	4.50
10943	Scots pine	29.20	13.50	23.80	FAIR	121.10	11.70	5.10
10944	Scots pine	16.40	11.00	10.80	FAIR	44.60	4.30	4.10
10945	Scots pine	22.00	16.00	15.90	FAIR	72.60	7.00	4.60
10946	Scots pine	24.70	15.50	18.90	FAIR	89.80	8.70	4.80
10947	dogwood spp	9.00	4.50	13.20	FAIR	39.20	2.30	3.00
10948	dogwood spp	10.90	5.50	15.90	FAIR	48.70	2.80	3.10
10949	dogwood spp	11.00	4.00	16.60	FAIR	50.90	3.00	3.10
10950	dogwood spp	14.30	5.00	21.20	FAIR	68.80	4.00	3.20
10951	Bur oak	12.30	7.50	13.20	FAIR	41.30	4.10	3.10
10952	Pin cherry	7.80	7.50	8.60	FAIR	26.90	1.30	3.10
10953	Showy mountain ash	19.80	8.50	22.90	FAIR	88.60	7.00	3.90
10954	apple spp	4.80	4.50	6.20	FAIR	20.20	1.70	3.30
10955	apple spp	2.00	2.50	3.50	FAIR	11.90	1.00	3.40
10956	Green ash	61.00	15.50	102.10	FAIR	414.70	27.00	4.10
10957	Green ash	61.40	15.00	102.10	FAIR	414.70	27.00	4.10
10958	Green ash	62.90	20.00	105.70	FAIR	429.40	28.00	4.10
10959	Green ash	64.80	16.00	109.40	FAIR	444.30	29.00	4.10
10960	Pin cherry	7.10	4.00	8.00	FAIR	24.90	1.20	3.10
10961	Green ash	65.70	16.50	111.20	FAIR	451.90	29.50	4.10
10962	Green ash	68.20	19.50	116.90	FAIR	475.00	31.00	4.10
10963	Scots pine	26.60	15.50	20.40	FAIR	100.00	9.60	4.90
10964	alder spp	1.00	2.50	4.90	FAIR	14.10	0.80	2.90
10965	Scots pine	25.30	14.00	19.60	FAIR	94.30	9.10	4.80
10966	Scots pine	22.40	14.00	16.60	FAIR	76.40	7.40	4.60
10967	Scots pine	31.20	15.00	25.50	FAIR	133.30	12.90	5.20
10968	Scots pine	9.90	8.00	5.70	FAIR	22.00	2.10	3.80
10969	Scots pine	27.40	15.50	21.20	FAIR	105.90	10.20	5.00
10970	Scots pine	15.00	13.00	9.60	FAIR	38.90	3.80	4.00
10971	Scots pine	17.70	13.50	11.90	FAIR	50.90	4.90	4.30
10972	Scots pine	28.60	16.00	22.90	FAIR	115.90	11.20	5.10
10973	Blue spruce	12.60	5.50	5.70	FAIR	37.60	6.40	6.60

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
10974	Blue spruce	19.60	6.00	10.20	FAIR	72.60	12.30	7.10
10975	Blue spruce	21.70	7.50	11.90	FAIR	95.80	16.30	8.00
10976	Blue spruce	24.60	7.50	13.90	FAIR	116.30	19.70	8.40
10977	Blue spruce	19.00	7.00	10.20	FAIR	75.80	12.90	7.40
10978	Blue spruce	22.40	6.00	12.60	FAIR	87.00	14.80	6.90
10979	Blue spruce	23.20	7.00	13.20	FAIR	104.10	17.70	7.90
10980	Blue spruce	24.50	7.00	13.90	FAIR	108.40	18.40	7.80
10981	Blue spruce	15.20	6.50	7.50	FAIR	52.00	8.80	6.90
10982	Blue spruce	12.70	4.50	5.70	FAIR	36.50	6.20	6.40
10983	Blue spruce	12.40	4.00	5.70	FAIR	33.90	5.80	5.90
10984	Blue spruce	12.50	5.00	5.70	FAIR	37.00	6.30	6.50
10985	Blue spruce	12.40	5.00	5.70	FAIR	37.00	6.30	6.50
10986	Blue spruce	11.20	5.00	4.90	FAIR	31.40	5.30	6.40
10987	Blue spruce	15.30	4.50	7.50	FAIR	45.70	7.80	6.10
10988	Blue spruce	23.80	7.50	13.20	FAIR	110.20	18.70	8.30
10989	Blue spruce	21.50	6.50	11.90	FAIR	89.20	15.10	7.50
10990	Blue spruce	18.80	7.00	9.60	FAIR	72.40	12.30	7.50
10991	Blue spruce	36.00	8.50	23.80	FAIR	208.10	35.30	8.80
10992	Blue spruce	22.70	7.00	12.60	FAIR	99.90	16.90	7.90
10993	Blue spruce	29.50	7.00	18.10	FAIR	136.60	23.20	7.50
10994	Blue spruce	32.30	7.50	20.40	FAIR	161.80	27.40	7.90
10995	Blue spruce	26.50	8.00	15.90	FAIR	139.80	23.70	8.80
10996	Blue spruce	22.40	7.00	12.60	FAIR	99.90	16.90	7.90
10997	Blue spruce	18.40	5.00	9.60	FAIR	60.30	10.20	6.30
10998	Blue spruce	20.20	6.00	10.80	FAIR	76.00	12.90	7.10
10999	Blue spruce	20.10	6.50	10.80	FAIR	81.70	13.90	7.60
11000	Blue spruce	16.60	8.50	8.00	FAIR	57.20	9.70	7.10
11001	Blue spruce	12.60	7.00	5.70	FAIR	37.60	6.40	6.60
11002	Blue spruce	20.60	11.50	11.30	FAIR	87.90	14.90	7.70
11003	Blue spruce	26.70	12.00	15.90	FAIR	141.80	24.10	8.90
11004	Blue spruce	17.40	8.50	8.60	FAIR	62.00	10.50	7.20
11005	Blue spruce	12.80	6.00	5.70	FAIR	37.60	6.40	6.60
11006	Blue spruce	1.00	1.50	1.80	FAIR	9.70	1.70	5.50
11007	Blue spruce	5.40	4.00	2.30	FAIR	13.70	2.30	6.00
11008	Blue spruce	12.70	6.50	5.70	FAIR	37.60	6.40	6.60
11009	Blue spruce	18.40	7.50	9.60	FAIR	71.30	12.10	7.40
11010	Blue spruce	10.90	5.50	4.90	FAIR	30.90	5.20	6.30
11011	Blue spruce	21.60	8.50	11.90	FAIR	94.40	16.00	7.90
11012	Blue spruce	16.70	3.50	8.60	FAIR	44.80	7.60	5.20
11013	Blue spruce	17.00	5.00	8.60	FAIR	54.50	9.20	6.40
11014	Blue spruce	31.50	6.50	19.60	FAIR	138.20	23.50	7.00
11015	Blue spruce	25.40	7.00	14.50	FAIR	112.90	19.10	7.80
11016	Blue spruce	36.10	8.00	23.80	FAIR	195.80	33.20	8.20
11017	Blue spruce	13.10	5.50	6.20	FAIR	40.40	6.90	6.60
11018	Blue spruce	28.40	8.00	17.30	FAIR	150.20	25.50	8.70
11019	Blue spruce	26.60	7.00	15.90	FAIR	122.00	20.70	7.70
11020	Blue spruce	20.20	6.00	10.80	FAIR	76.00	12.90	7.10
11021	Blue spruce	27.60	6.00	16.60	FAIR	111.70	19.00	6.70

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
11022	Blue spruce	21.30	6.50	11.30	FAIR	85.40	14.50	7.50
11023	Blue spruce	19.90	6.00	10.80	FAIR	76.00	12.90	7.10
11024	Blue spruce	20.90	7.50	11.30	FAIR	89.10	15.10	7.90
11025	Blue spruce	24.40	6.00	13.90	FAIR	94.80	16.10	6.80
11026	Blue spruce	19.20	6.00	10.20	FAIR	72.60	12.30	7.10
11027	Blue spruce	5.00	2.00	2.30	FAIR	12.50	2.10	5.50
11028	Blue spruce	20.90	6.00	11.30	FAIR	79.60	13.50	7.00
11029	Blue spruce	26.70	7.50	15.90	FAIR	130.50	22.10	8.20
11030	Blue spruce	23.70	7.00	13.20	FAIR	104.10	17.70	7.90
11031	Blue spruce	31.80	7.50	19.60	FAIR	156.30	26.50	8.00
11032	Blue spruce	30.70	7.50	18.90	FAIR	150.90	25.60	8.00
11033	Blue spruce	31.10	7.00	19.60	FAIR	146.90	24.90	7.50
11034	Blue spruce	22.00	7.00	11.90	FAIR	95.80	16.30	8.00
11035	Blue spruce	17.60	7.00	9.10	FAIR	66.00	11.20	7.30
11036	Blue spruce	26.10	10.50	15.20	FAIR	132.90	22.50	8.70
11037	Blue spruce	25.90	11.50	15.20	FAIR	132.90	22.50	8.70
11038	Blue spruce	10.60	4.00	4.50	FAIR	28.20	4.80	6.20
11039	Blue spruce	30.50	9.50	18.90	FAIR	179.30	30.40	9.50
11040	Blue spruce	29.80	9.00	18.10	FAIR	171.10	29.00	9.50
11041	Blue spruce	24.00	10.00	13.90	FAIR	116.30	19.70	8.40
11042	Blue spruce	20.00	10.00	10.80	FAIR	81.70	13.90	7.60
11043	Blue spruce	22.30	8.50	12.60	FAIR	101.30	17.20	8.10
11044	Blue spruce	24.30	8.50	13.90	FAIR	116.30	19.70	8.40
11045	Blue spruce	29.80	8.00	18.10	FAIR	155.60	26.40	8.60
11046	Blue spruce	27.00	10.00	15.90	FAIR	141.80	24.10	8.90
11047	Blue spruce	29.00	9.50	17.30	FAIR	160.90	27.30	9.30
11048	Blue spruce	31.50	9.50	19.60	FAIR	190.20	32.30	9.70
11049	Blue spruce	29.00	9.50	17.30	FAIR	160.90	27.30	9.30
11050	Blue spruce	38.50	11.50	25.50	FAIR	275.30	46.70	10.80
11051	Blue spruce	30.60	10.50	18.90	FAIR	181.70	30.80	9.60
11052	Blue spruce	19.30	7.00	10.20	FAIR	76.90	13.00	7.60
11053	Blue spruce	39.00	12.00	26.40	FAIR	285.90	48.50	10.80
11054	Blue spruce	19.90	8.00	10.80	FAIR	81.70	13.90	7.60
11055	Blue spruce	37.90	12.50	25.50	FAIR	271.90	46.10	10.70
11056	Blue spruce	38.90	12.50	26.40	FAIR	285.90	48.50	10.80
11057	Blue spruce	33.50	12.00	21.20	FAIR	213.40	36.20	10.00
11058	Blue spruce	39.70	13.00	26.40	FAIR	289.50	49.10	11.00
11059	Blue spruce	30.80	12.50	18.90	FAIR	181.70	30.80	9.60
11060	Blue spruce	42.50	13.00	29.20	FAIR	326.20	55.30	11.20
11061	Blue spruce	21.80	12.00	11.90	FAIR	95.80	16.30	8.00
11062	Blue spruce	42.00	13.00	29.20	FAIR	326.20	55.30	11.20
11063	Blue spruce	25.50	11.00	14.50	FAIR	126.20	21.40	8.70
11064	Blue spruce	30.20	12.00	18.90	FAIR	179.30	30.40	9.50
11065	Blue spruce	29.20	12.00	18.10	FAIR	168.80	28.60	9.30
11066	Blue spruce	32.40	12.50	20.40	FAIR	201.60	34.20	9.90
11067	Blue spruce	31.40	13.50	19.60	FAIR	190.20	32.30	9.70
11068	Blue spruce	20.40	9.00	10.80	FAIR	82.90	14.10	7.70
11069	Blue spruce	21.20	10.00	11.30	FAIR	89.10	15.10	7.90

Tree ID	Species Name	DBH (cm)	Height (m)	Canopy Cover (m ²)	Tree Condition	Leaf Area (m ²)	Leaf Biomass (kg)	Leaf Area Index
11070	Blue spruce	20.60	10.00	11.30	FAIR	87.90	14.90	7.70
11071	Blue spruce	17.00	8.50	8.60	FAIR	61.10	10.40	7.10
11072	Blue spruce	24.50	12.50	13.90	FAIR	118.00	20.00	8.50
11073	Blue spruce	28.10	13.00	16.60	FAIR	153.30	26.00	9.20
11074	Blue spruce	31.50	13.50	19.60	FAIR	190.20	32.30	9.70
11075	Blue spruce	24.30	11.50	13.90	FAIR	116.30	19.70	8.40
11076	Blue spruce	17.50	10.50	9.10	FAIR	65.10	11.00	7.20
11077	Blue spruce	26.00	13.00	15.20	FAIR	132.90	22.50	8.70
11078	Blue spruce	19.80	10.00	10.80	FAIR	81.70	13.90	7.60
11079	Blue spruce	20.20	12.50	10.80	FAIR	82.90	14.10	7.70
11080	Blue spruce	20.30	11.00	10.80	FAIR	82.90	14.10	7.70
11081	Blue spruce	23.00	13.00	12.60	FAIR	104.30	17.70	8.30
	Total			55233.10		273139.20	21324.10	

Appendix II

Species	Trees	Carbon Storage		Gross Carbon Sequestration		Avoided Runoff		Pollution Removal		Structural Value
	Number	(metric ton)	(Can\$)	(metric ton/yr)	(Can\$/yr)	(m ³ /yr)	(Can\$/yr)	(metric ton/yr)	(Can\$/yr)	(Can\$)
Freeman maple	1	0.00	0.09	0.00	0.02	0.02	0.05	0.00	0.03	41.17
Amur maple	3	0.05	5.26	0.00	0.36	0.27	0.62	0.00	0.29	138.59
Boxelder	64	49.98	5741.55	0.57	65.31	29.93	69.57	0.01	32.75	153395.70
Silver maple	11	4.00	459.29	0.05	5.66	3.88	9.01	0.00	4.24	21423.79
alder spp	5	0.06	6.96	0.00	0.38	0.26	0.61	0.00	0.29	391.09
serviceberry spp	1	0.00	0.05	0.00	0.02	0.01	0.03	0.00	0.01	45.68
Paper birch	1	0.10	11.36	0.00	0.42	0.14	0.33	0.00	0.15	460.59
hackberry spp	35	0.04	4.72	0.01	0.81	0.88	2.05	0.00	0.97	1598.63
cedar spp	2	0.03	3.26	0.00	0.15	0.06	0.14	0.00	0.07	155.09
dogwood spp	4	0.10	10.92	0.01	0.64	0.33	0.76	0.00	0.36	323.02
Black ash	20	2.98	341.76	0.06	6.66	3.69	8.58	0.00	4.04	17296.94
Green ash	607	83.88	9635.21	1.43	164.19	146.66	340.95	0.06	160.52	697962.16
seabuckthorn spp	3	0.01	0.73	0.00	0.10	0.04	0.10	0.00	0.05	123.73
Tamarack	6	0.93	106.89	0.02	2.04	2.15	4.99	0.00	2.35	10700.65
apple spp	4	0.02	2.78	0.00	0.24	0.15	0.34	0.00	0.16	153.59
White spruce	46	8.73	1002.77	0.17	19.08	10.45	24.30	0.00	11.44	64741.78
Blue spruce	141	18.33	2105.07	0.39	44.62	24.53	57.03	0.01	26.85	112035.40
Scots pine	27	1.72	197.68	0.04	4.99	2.93	6.81	0.00	3.21	14075.18
cottonwood spp	10	8.23	945.75	0.10	11.68	4.28	9.94	0.00	4.68	24156.22
Populus canescens	55	1.70	195.21	0.07	8.22	2.53	5.88	0.00	2.77	7912.32

Species	Trees	Carbon Storage		Gross Carbon Sequestration		Avoided Runoff		Pollution Removal		Structural Value
	Number	(metric ton)	(Can\$)	(metric ton/yr)	(Can\$/yr)	(m ³ /yr)	(Can\$/yr)	(metric ton/yr)	(Can\$/yr)	(Can\$)
Balm-of-gilead	7	0.59	67.40	0.02	2.10	0.75	1.75	0.00	0.82	2756.35
Quaking aspen	1	0.03	3.15	0.00	0.16	0.03	0.06	0.00	0.03	58.59
Pin cherry	3	0.04	4.60	0.00	0.36	0.14	0.34	0.00	0.16	121.60
Canada red chokecherry	7	0.30	34.50	0.01	1.55	0.59	1.38	0.00	0.65	1249.87
Siberian crabapple	7	0.58	66.11	0.02	2.19	0.88	2.03	0.00	0.96	2732.12
Northern pin oak	1	0.00	0.17	0.00	0.03	0.02	0.04	0.00	0.02	49.66
Bur oak	60	0.54	62.39	0.04	4.25	1.98	4.61	0.00	2.17	4215.15
Showy mountain ash	5	0.44	50.60	0.01	1.55	0.64	1.50	0.00	0.71	2322.38
American basswood	17	2.37	272.63	0.05	5.53	4.71	10.94	0.00	5.15	19227.12
Littleleaf linden	29	4.14	475.26	0.08	9.44	7.40	17.20	0.00	8.10	34772.77
American elm	169	132.97	15274.25	1.63	187.43	135.74	315.56	0.06	148.57	732962.23
The David Elm	17	0.46	53.11	0.02	2.05	1.50	3.49	0.00	1.64	2875.77
Siberian elm	169	35.69	4099.83	0.69	79.36	40.31	93.70	0.02	44.12	148330.78
Total	1538	359.03	41241.29	5.50	631.58	427.88	994.69	0.18	468.31	2078805.69

Appendix III

National Tree Benefits Calculator Values				
DBH Class Average	Number of trees in DBH class	Stormwater mitigated per tree (Gallons)	Electricity saved per tree (Kilowatt)	Atmospheric CO2 sequestered per tree(lbs)
6.85	62	79	13	53
15.73	213	336	54	215
24.35	178	694	109	414
34.29	72	1251	199	719
44.87	54	1972	247	954
56.29	27	2861	276	1160
Total		351145	66828	257377

Appendix IV

National Tree Benefits Calculator Values				
DBH Class Average	Number of trees in DBH class	Stormwater mitigated per tree (Gallons)	Electricity saved per tree (Kilowatt)	Atmospheric CO2 sequestered per tree(lbs)
8.45	2	103	25	101
16.10	13	332	65	255
27.43	3	833	144	513
-	-	-	-	-
48.30	1	2123	253	865
68.60	1	3764	321	907
Total		12908	1901	6828

Appendix V

Map of Public Trees Distributed Within Manitou

