



MEMORANDUM

July 7, 2020

Reference No.: 20328

TO: Jae Park, P.Eng., / Project Engineer, Transportation Construction / County of Simcoe

FROM: Alexa Disher / Terrestrial Ecologist / LEA Consulting Ltd.
Bradley Dufour / Environmental Manager / LEA Consulting Ltd.

CC: Julie Scruton, P.Eng., / Manager Transportation Construction / County of Simcoe
Richard Krutzler / Project Manager / LEA Consulting Ltd.
Sameh Salib / Assistant Project Manager / LEA Consulting Ltd.

RE: Tree Inventory Memorandum for the Replacement of Old Fort Road (Simcoe County Road 58) Overhead Bridge (Simcoe Structure #058086), County of Simcoe

1 INTRODUCTION

LEA Consulting Ltd. (LEA) has been retained by the County of Simcoe (County) to undertake a Detail Design and Municipal Class Environmental Assessment (MCEA) study for the replacement of the Old Fort Road (Simcoe County 58) Overhead Bridge (Simcoe Structure #058086) over the Trans Canada Trail (abandoned CN Railway Line) (Figure 1). The objective of the MCEA is to undertake a visual condition survey of the existing structure, review and assess potential bridge replacement options, and to select a preferred alternative that weighs all relevant technical, natural environment, social, and financial considerations. This tree inventory memorandum is provided as a part of the background information necessary for the evaluation of alternatives for the replacement of the Old Fort Road Bridge.

The existing bridge is located on Old Fort Road in the Township of Tay, Ontario. The bridge crossing is approximately 300 m south of Highway 12 (see attached Key Map). Built in 1970, the existing bridge structure consists of three (3) concrete slab spans on prestressed voided slab and reinforced concrete piers and abutments.

Alternatives being considered for addressing the conditions of the Bridge include:

1. Single Span Bridge
2. Tunnel Structure
3. At Grade Crossing

Of the alternatives presented above, the option that would have the greatest impact to the surrounding environment, including to trees would be Option 3. This alternative would require significant tree and shrub



removal to accommodate the grade raise of the trail. Other alternatives being considered would have less impact on trees.

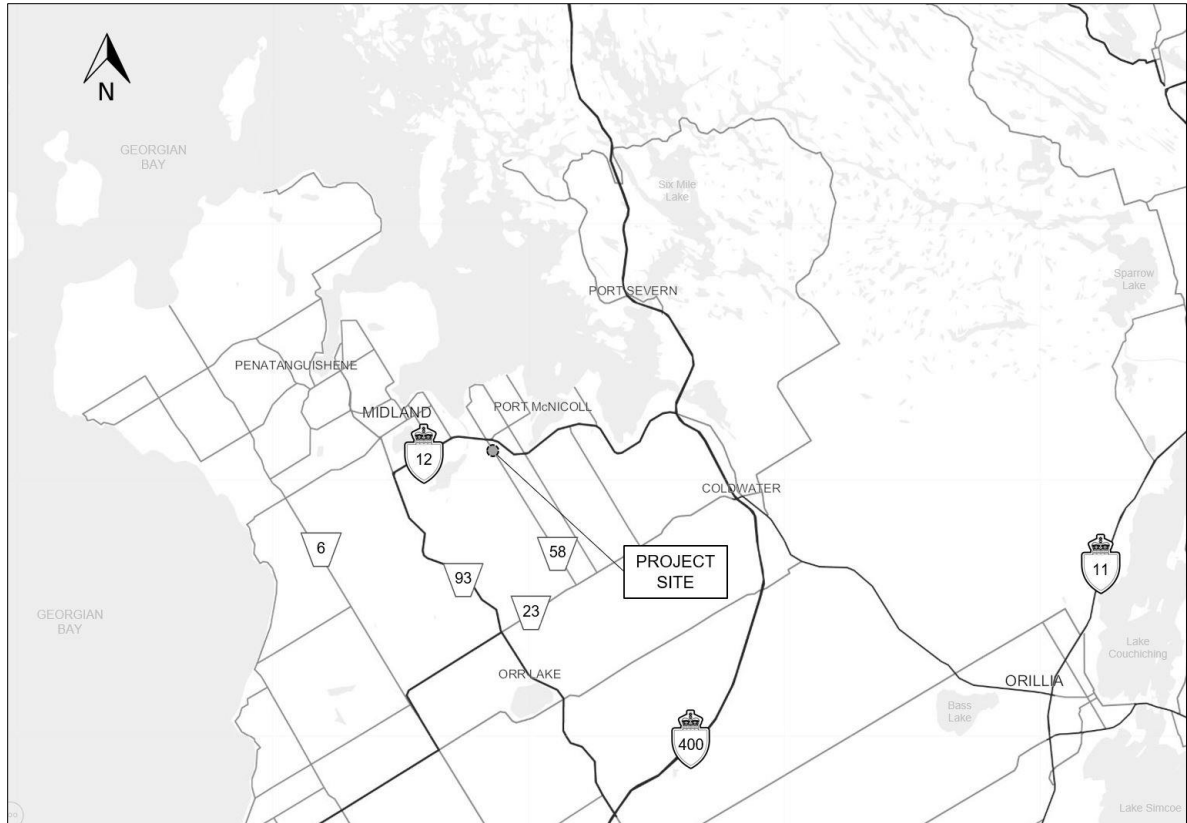


Figure 1. Project Key Map

2 METHODOLOGY

The tree inventory was conducted on March 31 and April 1, 2020. The tree inventory survey area extended 250 m east and west of the bridge along the Trans Canada Trail and included all trees over 30 cm Diameter at Breast Height (DBH). The survey area north and south was approximately 20 m respectively and only included areas within the assumed legal boundary of the Trans Canada Trail. Maps of all inventoried trees surveyed is included in Appendix A. A photographic record is provided in Appendix B.

Tree resources were assessed in the field utilizing the parameters outlined below. A tree inventory summary table with this information is provided in Appendix C.

- ▶ **Tree #** - number assigned to tree that corresponds to Figure 2 & 3.
- ▶ **Species** - common and botanical names.
- ▶ **DBH** - diameter (centimeters and inches) at breast height, measured at ~1.4 m above the ground. Multiple recorded measurements indicate a multi-stem trunk.



- ▶ **Condition** - condition of tree considering trunk integrity, crown structure, and crown vigor. Condition ratings include poor, fair and good.
 - ▶ Good: Minor problems with health and/or structural form.
 - ▶ Fair: More serious problems with health and/or structural form.
 - ▶ Poor: Major problems with health and structural Form.
 - ▶ Dead: Dead.

A limiting factor of the tree inventory survey was that the survey was completed in the early spring prior to the leaf-out period. Identification of deciduous trees was based primarily on tree bark and other identifying features such as tree leaves/fruit/nuts found at base. It should be noted that all techniques were completed from the ground and none of the survey included climbing. Additionally, no trees were cored, dissected and no excavation took place for the purposes of this survey. Lastly, the results of this survey are based on observation that took place on survey dates noted above, and therefore the extent of observations that can be made may be limited by the time of year in which the survey took place.

3 TREE INVENTORY SUMMARY

A total of 512 trees and 12 tree species were inventoried within the survey area. In some cases, trees were not able to be identified based on condition. In these few cases trees were labeled as “No ID”. The majority of identified species included Trembling Aspen (*Populus tremuloides*) (n = 113; 22%) and Eastern White Cedar (n=114; 22%) (*Thuja occidentalis*), which were most predominant on the south of the Trans Canada Trail. Tree density was also observed to be greater on the south side of the Trans Canada Trail. An existing snowmobile trail on the north side of the Trans Canada Trail, east of the bridge, limited the establishment of trees in the area. Increased occurrences of Paper Birch (*Betula papyrifera*) were observed on the south side of the Trans Canada Trail, east of the bridge. The vast majority all trees inventoried were in “Good” or “Fair” condition, indicating that nearly all trees had only minor structural or health related defects. No tree Species at Risk (SAR), such as Butternut (*Juglans cinerea*), were recorded during the survey.

4 TREE PROTECTION AND RECOMMENDATIONS

The most typical construction damage to trees is done to tree root systems. The dripline of a trees canopy is typically thought to be associated with the root area; however, the root zones can extend far beyond the dripline of the tree. Therefore, any proposed construction near the trees inventoried could put these trees at risk of damage from heavy equipment. To protect trees which are not set to be removed, construction activities, including storage of equipment, should be kept away from trees as much as possible. If sufficient distance cannot be maintained between trees and the construction zone, tree protection fencing is recommended. Requirements for tree protection fencing will be determined as the design progresses. Additionally, if roots or branches of trees are accidentally damaged during construction, trees should be clean cut with sharp pruning tools to help minimize decay and entry points for disease.



Additionally, several White Ash (*Fraxinus americana*) trees were recorded during the tree inventory survey. Should any Ash trees be deemed necessary for removal, appropriate storage of the removed tree should be used to avoid spreading of the Emerald Ash Borer (*Agrilus planipennis*). Emerald Ash Borer is a non-native species of beetle introduced from East Asia which causes Ash tree fatalities.

Lastly, in order to comply with the *Migratory Birds Convention Act, 1994* (MBCA), no tree removals should take place between April 1 and August 31 to prevent impacts to nesting migratory birds. In the event that vegetation clearing and/or tree removals must occur within the breeding bird timing window, a Qualified Avian Biologist should be retained prior to clearing, to screen for breeding birds and their nests using methods outlined by Environment Canada (EC).

5 CLOSURE

This memorandum was prepared by LEA to summarize the findings of a tree inventory survey completed at the Old Fort Road Bridge crossing of the Trans Canada Trail in the County of Simcoe. The results of the tree inventory note that Trembling Aspen and Eastern White Cedar account for a large majority (44%) of the surveyed trees and that the most trees were considered to be in “Good” or “Fair” condition with only minor structural or health related defects. Butternut, a provincial Species at Risk protected under the *Endangered Species Act, 2007* (ESA) was not identified in the tree inventory survey. The results of the tree inventory also highlight that Option 3 – At Grade Crossing would be most impactful and require the significant removal of trees to accommodate the expanded base for raising the grade of the Trans Canada Trail to meet Old Fort Road.

Additional project related context pertaining to the terrestrial ecosystem, including soils, physiography, botanical species, vegetation communities and wildlife, will be provided under separate cover in support of the MCEA study.

Should you have any questions or concerns related to the information provided above, please do not hesitate to contact the undersigned.

Yours truly,

LEA CONSULTING LTD.

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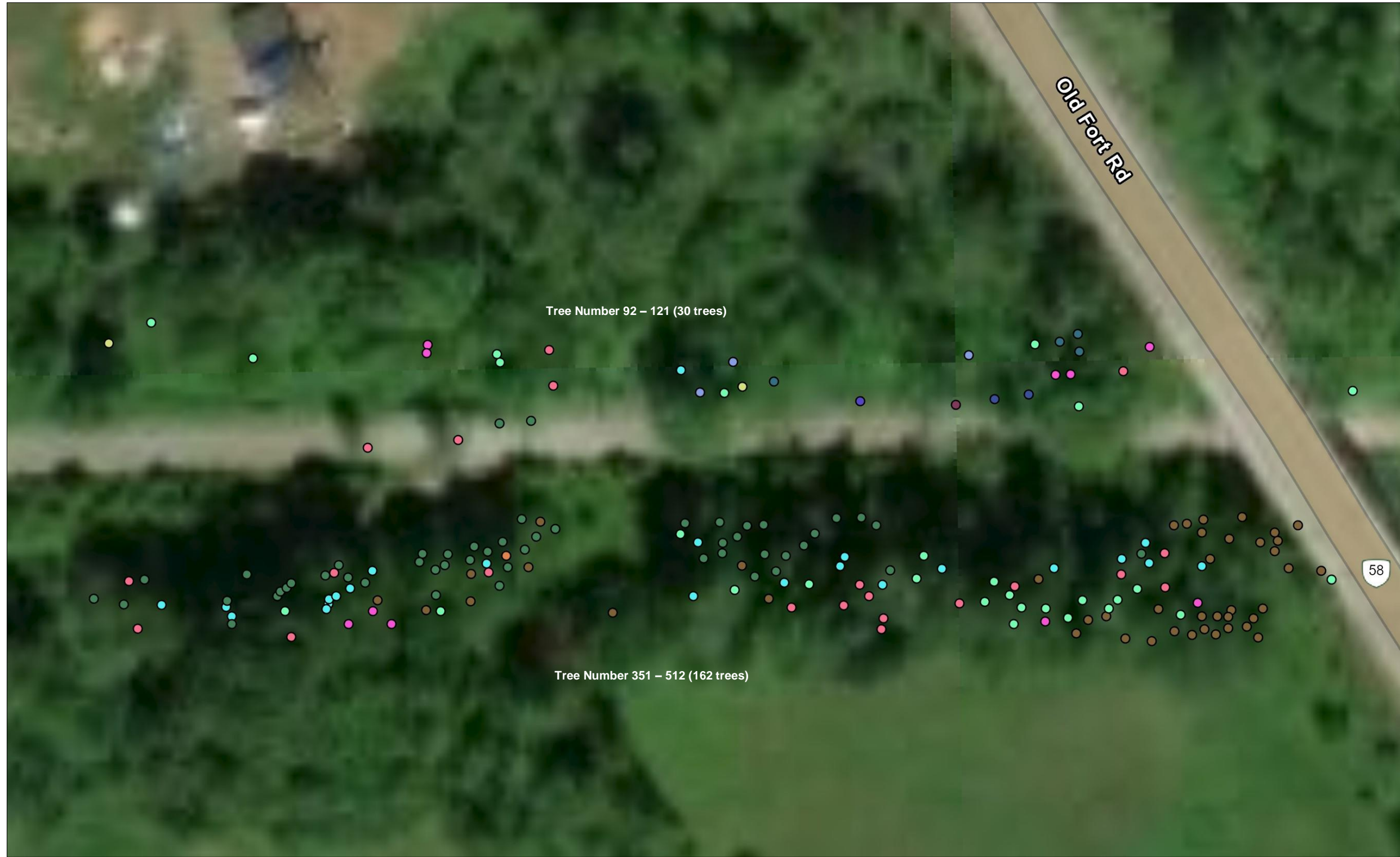
Enclosure:

- Appendix A – Tree Inventory Map
- Appendix B – Photographic Record
- Appendix C – Tree Inventory Summary Results Table



APPENDIX A

Tree Inventory Map



- Legend:**
Tree Species
- American Beech
 - American Elm
 - Black Cherry
 - Cedar
 - No ID
 - Paper Birch
 - Red Maple
 - Red Oak
 - Red Pine
 - Trembling Aspen
 - White Ash
 - White Oak

Legend:

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, ©OpenStreetMap contributors, and the GIS User Community.



Replacement of Old Fort Road Overhead Bridge

Tree Inventory Map – West of Bridge

Project N°.: 20328

Figure: 2

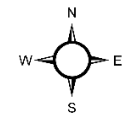
Scale: NTS

Date: July 2020

Created By: AD

Checked By: BD

Datum: NAD 83
 Projection: UTM Zone 17N



0 m 20 m 40 m 60 m 80 m 100 m





Legend:

Tree Species

- American Beech
- American Elm
- Black Cherry
- Cedar
- No ID
- Paper Birch
- Red Maple
- Red Oak
- Red Pine
- Trembling Aspen
- White Ash
- White Oak

Legend:

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, ©OpenStreetMap contributors, and the GIS User Community.



Replacement of Old Fort Road Overhead Bridge

Tree Inventory Map – East of Bridge

Project N°.: 20328

Figure: 3

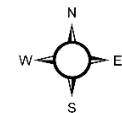
Scale: NTS

Date: July 2020

Created By: AD

Checked By: BD

Datum: NAD 83
Projection: UTM Zone 17N



0 m 25 m 50 m 75 m 100 m 125 m





APPENDIX B

Photographic Record



Photo 1: Photo taking from Old Fort Road Bridge facing East. March 31, 2020.



Photo 2: Photo taken from Old Fort Road Bridge facing West. March 31, 2020.



Photo 3: Snowmobile trail parallel to the TransCanada Trail on the North-East of Bridge. Some Trembling Aspen trees can be seen on the right side of photo. March 31, 2020.



Photo 4: Eastern White Cedar trees on the South-East side of the Bridge. March 31, 2020.



Photo 5: White Ash tree North-East of the Bridge. March 31, 2020.



Photo 6: Canadian Beaver evidence North-West of Old Fort Road Bridge. March 31, 2020.



APPENDIX C

Tree Inventory Summary Results Table

Tree Number	Common Name	Species Name	DBH (cm) * = inches	Condition
1	Paper Birch	<i>Betula papyrifera</i>	38	Good
2	Paper Birch	<i>Betula papyrifera</i>	37	Fair
3	Paper Birch	<i>Betula papyrifera</i>	38.5	Good
5	Paper Birch	<i>Betula papyrifera</i>	58	Good
6	Trembling Aspen	<i>Populus tremuloides</i>	67	Dead
8	Trembling Aspen	<i>Populus tremuloides</i>	85	Good
9	Trembling Aspen	<i>Populus tremuloides</i>	96	Good
10	No ID		69, 47	Poor
11	Trembling Aspen	<i>Populus tremuloides</i>	47	Good
12	Paper Birch	<i>Betula papyrifera</i>	34	Good
13	Paper Birch	<i>Betula papyrifera</i>	35.5	Good
14	American Beech	<i>Fagus grandifolia</i>	44, 57	Good
15	White Ash	<i>Fraxinus americana</i>	44	Good
16	White Oak	<i>Quercus alba</i>	94	Poor
17	White Oak	<i>Quercus alba</i>	69	Fair
18	White Oak	<i>Quercus alba</i>	88	Good
19	Black Cherry	<i>Prunus serotina</i>	40	Good
20	White Oak	<i>Quercus alba</i>	67	Good
21	Trembling Aspen	<i>Populus tremuloides</i>	66, 84	Good
22	Paper Birch	<i>Betula papyrifera</i>	57	Good
23	White Ash	<i>Fraxinus americana</i>	32	Good
25	White Ash	<i>Fraxinus americana</i>	34	Good
26	White Oak	<i>Quercus alba</i>	36	Good
27	White Oak	<i>Quercus alba</i>	31	Good
28	White Oak	<i>Quercus alba</i>	126, 121	Good
29	Red Oak	<i>Quercus rubra</i>	106	Good
31	Black Cherry	<i>Prunus serotina</i>	35	Poor
32	White Ash	<i>Fraxinus americana</i>	36	Good
33	White Ash	<i>Fraxinus americana</i>	32	Good
34	Paper Birch	<i>Betula papyrifera</i>	32	Good
35	White Ash	<i>Fraxinus americana</i>	82, 27	Good
36	White Ash	<i>Fraxinus americana</i>	55	Good
37	White Ash	<i>Fraxinus americana</i>	44	Poor
38	White Ash	<i>Fraxinus americana</i>	65	Fair
39	White Ash	<i>Fraxinus americana</i>	45	Good
40	White Ash	<i>Fraxinus americana</i>	32	Good
41	White Ash	<i>Fraxinus americana</i>	32	Fair
42	White Oak	<i>Quercus alba</i>	82, 27	Good
43	White Ash	<i>Fraxinus americana</i>	55	Good

44	White Ash	<i>Fraxinus americana</i>	44	Good
45	White Ash	<i>Fraxinus americana</i>	65	Good
46	White Ash	<i>Fraxinus americana</i>	45	Good
47	Paper Birch	<i>Betula papyrifera</i>	32	Good
48	White Ash	<i>Fraxinus americana</i>	56	Good
49	White Ash	<i>Fraxinus americana</i>	45	Good
50	White Ash	<i>Fraxinus americana</i>	37	Good
51	Paper Birch	<i>Betula papyrifera</i>	49	Good
52	White Ash	<i>Fraxinus americana</i>	72	Good
53	Paper Birch	<i>Betula papyrifera</i>	35	Good
54	White Oak	<i>Quercus alba</i>	55	Good
55	Paper Birch	<i>Betula papyrifera</i>	36	Good
56	White Oak	<i>Quercus alba</i>	43, 47, 40	Good
57	White Ash	<i>Fraxinus americana</i>	32	Good
58	Paper Birch	<i>Betula papyrifera</i>	32	Good
60	Trembling Aspen	<i>Populus tremuloides</i>	32	Good
61	White Ash	<i>Fraxinus americana</i>	33	Good
62	White Ash	<i>Fraxinus americana</i>	64, 56	Good
63	White Ash	<i>Fraxinus americana</i>	35	Good
64	White Ash	<i>Fraxinus americana</i>	55	Good
65	White Ash	<i>Fraxinus americana</i>	39	Good
66	White Ash	<i>Fraxinus americana</i>	48	Good
67	White Ash	<i>Fraxinus americana</i>	54	Good
68	White Ash	<i>Fraxinus americana</i>	57	Good
69	No ID		65	Good
70	White Ash	<i>Fraxinus americana</i>	41, 35	Good
71	Paper Birch	<i>Betula papyrifera</i>	34, 36, 35	Good
72	White Ash	<i>Fraxinus americana</i>	44, 44	Good
74	White Ash	<i>Fraxinus americana</i>	41	Good
75	White Ash	<i>Fraxinus americana</i>	32	Fair
76	Trembling Aspen	<i>Populus tremuloides</i>	65, 39	Good
77	Black Cherry	<i>Prunus serotina</i>	38	Good
78	Red Maple	<i>Acer rubrum</i>	83	Fair
79	Trembling Aspen	<i>Populus tremuloides</i>	67, 54	Good
80	White Ash	<i>Fraxinus americana</i>	60	Good
81	No ID		34	Poor
82	White Ash	<i>Fraxinus americana</i>	32	Fair
83	White Ash	<i>Fraxinus americana</i>	33	Poor
84	White Oak	<i>Quercus alba</i>	49	Good
85	Red Maple	<i>Acer rubrum</i>	37	Good

86	Red Maple	<i>Acer rubrum</i>	34	Good
87	Red Maple	<i>Acer rubrum</i>	36	Good
88	Red Maple	<i>Acer rubrum</i>	33	Good
88	White Ash	<i>Fraxinus americana</i>	33	Good
89	White Ash	<i>Fraxinus americana</i>	58	Good
91	Black Cherry	<i>Prunus serotina</i>	31	Good
92	Red Oak	<i>Quercus rubra</i>	101	Good
93	Red Pine	<i>Pinus resinosa</i>	43	Good
94	Red Pine	<i>Pinus resinosa</i>	100	Good
95	Red Pine	<i>Pinus resinosa</i>	43	Good
96	Black Cherry	<i>Prunus serotina</i>	40	Dead
97	Black Cherry	<i>Prunus serotina</i>	200	Fair
98	White Ash	<i>Fraxinus americana</i>	42	Good
99	White Ash	<i>Fraxinus americana</i>	35	Good
100	White Oak	<i>Quercus alba</i>	68, 36, 35	Good
101	White Oak	<i>Quercus alba</i>	46	Good
102	American Beech	<i>Fagus grandifolia</i>	89	Good
103	Bitternut Hickory	<i>Carya cordiformis</i>	90, 41	Fair
104	No ID		37	Dead
105	Red Maple	<i>Acer rubrum</i>	54, 40, 44, 33, 35, 50, 41	Good
105	Red Pine	<i>Pinus resinosa</i>	34	Good
106	American Beech	<i>Fagus grandifolia</i>	123, 79	Fair
107	American Beech	<i>Fagus grandifolia</i>	78	Good
108	Paper Birch	<i>Betula papyrifera</i>	50	Good
110	White Ash	<i>Fraxinus americana</i>	34	Good
111	Red Oak	<i>Quercus rubra</i>	67	Good
112	Red Oak	<i>Quercus rubra</i>	65, 62, 50	Poor
113	Cedar	<i>Thuja occidentalis</i>	60	Good
114	Cedar	<i>Thuja occidentalis</i>	38	Good
115	Red Oak	<i>Quercus rubra</i>	57, 52, 36, 37	Good
116	Red Oak	<i>Quercus rubra</i>	52	Good
117	White Ash	<i>Fraxinus americana</i>	39	Good
118	White Ash	<i>Fraxinus americana</i>	92	Good
119	Black Cherry	<i>Prunus serotina</i>	47	Good
120	Black Cherry	<i>Prunus serotina</i>	43, 42	Good
121	White Ash	<i>Fraxinus americana</i>	106, 38, 63, 82, 108	Good
122	White Ash	<i>Fraxinus americana</i>	57	Good
123	Red Maple	<i>Acer rubrum</i>	128, 165, 81	Poor
124	Trembling Aspen	<i>Populus tremuloides</i>	11*	Good
125	Trembling Aspen	<i>Populus tremuloides</i>	41	Good

126	Trembling Aspen	<i>Populus tremuloides</i>	40, 60*	Good
127	White Ash	<i>Fraxinus americana</i>	100	Good
129	White Ash	<i>Fraxinus americana</i>	44	Good
130	Trembling Aspen	<i>Populus tremuloides</i>	20*	Good
132	Trembling Aspen	<i>Populus tremuloides</i>	31*	Good
132	Trembling Aspen	<i>Populus tremuloides</i>	31*	Good
133	White Ash	<i>Fraxinus americana</i>	35	Poor
134	Trembling Aspen	<i>Populus tremuloides</i>	29*	Good
135	White Ash	<i>Fraxinus americana</i>	38	Good
136	American Elm	<i>Ulmus americana</i>	29*	Good
137	White Ash	<i>Fraxinus americana</i>	147	Poor
138	Trembling Aspen	<i>Populus tremuloides</i>	21*	Good
139	White Ash	<i>Fraxinus americana</i>	36*	Good
140	Trembling Aspen	<i>Populus tremuloides</i>	20*	Good
141	Trembling Aspen	<i>Populus tremuloides</i>	29*	Good
143	Trembling Aspen	<i>Populus tremuloides</i>	18*	Good
145	Trembling Aspen	<i>Populus tremuloides</i>	27*	Good
146	Trembling Aspen	<i>Populus tremuloides</i>	16*	Good
147	White Ash	<i>Fraxinus americana</i>	98, 60, 78, 54	Fair
149	Trembling Aspen	<i>Populus tremuloides</i>	16, 8, 16, 10*	Good
150	Trembling Aspen	<i>Populus tremuloides</i>	65	Good
151	Paper Birch	<i>Betula papyrifera</i>	32*	Good
152	Trembling Aspen	<i>Populus tremuloides</i>	52*	Good
153	Trembling Aspen	<i>Populus tremuloides</i>	28*	Good
154	Trembling Aspen	<i>Populus tremuloides</i>	28*	Good
156	Trembling Aspen	<i>Populus tremuloides</i>	157	Fair
157	Trembling Aspen	<i>Populus tremuloides</i>	13*	Poor
158	Trembling Aspen	<i>Populus tremuloides</i>	94	Poor
158	Trembling Aspen	<i>Populus tremuloides</i>	94	Good
159	Trembling Aspen	<i>Populus tremuloides</i>	29*	Good
160	White Ash	<i>Fraxinus americana</i>	17*	Good
161	Paper Birch	<i>Betula papyrifera</i>	17*	Good
162	White Ash	<i>Fraxinus americana</i>	29*	Good
163	Trembling Aspen	<i>Populus tremuloides</i>	59	Good
164	Trembling Aspen	<i>Populus tremuloides</i>	29*	Good
165	Paper Birch	<i>Betula papyrifera</i>	17, 12*	Good
166	Trembling Aspen	<i>Populus tremuloides</i>	59	Fair
167	Trembling Aspen	<i>Populus tremuloides</i>	27*	Good
168	Trembling Aspen	<i>Populus tremuloides</i>	64	Good
169	Trembling Aspen	<i>Populus tremuloides</i>	12*	Fair

170	Trembling Aspen	<i>Populus tremuloides</i>	12*	Good
171	Trembling Aspen	<i>Populus tremuloides</i>	125	Good
172	Trembling Aspen	<i>Populus tremuloides</i>	11*	Good
173	Paper Birch	<i>Betula papyrifera</i>	76	Good
174	Paper Birch	<i>Betula papyrifera</i>	22.5*	Good
175	Trembling Aspen	<i>Populus tremuloides</i>	115	Good
176	White Ash	<i>Fraxinus americana</i>	13*	Good
177	Trembling Aspen	<i>Populus tremuloides</i>	111	Good
178	Trembling Aspen	<i>Populus tremuloides</i>	14*	Fair
178	Trembling Aspen	<i>Populus tremuloides</i>	14*	Good
181	White Ash	<i>Fraxinus americana</i>	35, 32	Good
182	White Ash	<i>Fraxinus americana</i>	29, 20, 13, 7, 11*	Good
183	Trembling Aspen	<i>Populus tremuloides</i>	53	Good
184	Paper Birch	<i>Betula papyrifera</i>	15, 10, 6, 5*	Good
185	Trembling Aspen	<i>Populus tremuloides</i>	39	Good
186	Paper Birch	<i>Betula papyrifera</i>	23, 10*	Good
187	Trembling Aspen	<i>Populus tremuloides</i>	115	Good
188	White Ash	<i>Fraxinus americana</i>	43, 32	Good
189	Eastern White Cedar	<i>Thuja occidentalis</i>	32	Good
190	Paper Birch	<i>Betula papyrifera</i>	65	Good
190	Paper Birch	<i>Betula papyrifera</i>	13*	Good
191	Eastern White Cedar	<i>Thuja occidentalis</i>	13*	Good
192	White Ash	<i>Fraxinus americana</i>	14.5*	Good
193	Paper Birch	<i>Betula papyrifera</i>	23*	Good
194	White Ash	<i>Fraxinus americana</i>	54	Good
195	White Ash	<i>Fraxinus americana</i>	24, 20*	Good
196	Trembling Aspen	<i>Populus tremuloides</i>	64	Good
197	White Ash	<i>Fraxinus americana</i>	24, 13*	Good
198	Eastern White Cedar	<i>Thuja occidentalis</i>	53	Good
199	Paper Birch	<i>Betula papyrifera</i>	29	Good
200	Paper Birch	<i>Betula papyrifera</i>	12*	Good
201	Trembling Aspen	<i>Populus tremuloides</i>	22*	Poor
202	Eastern White Cedar	<i>Thuja occidentalis</i>	33, 20, 31	Good
203	Paper Birch	<i>Betula papyrifera</i>	23, 6.5*	Fair
204	Paper Birch	<i>Betula papyrifera</i>	38*	Good
205	Eastern White Cedar	<i>Thuja occidentalis</i>	42	Good
206	Trembling Aspen	<i>Populus tremuloides</i>	43*	Good
207	White Ash	<i>Fraxinus americana</i>	33*	Good
208	Paper Birch	<i>Betula papyrifera</i>	11*	Good
209	Eastern White Cedar	<i>Thuja occidentalis</i>	13*	Good

210	Eastern White Cedar	<i>Thuja occidentalis</i>	7, 7, 11*	Good
211	Trembling Aspen	<i>Populus tremuloides</i>	17*	Good
213	Trembling Aspen	<i>Populus tremuloides</i>	19*	Good
214	Eastern White Cedar	<i>Thuja occidentalis</i>	17*	Good
215	Paper Birch	<i>Betula papyrifera</i>	53	Good
216	Paper Birch	<i>Betula papyrifera</i>	14*	Good
217	Trembling Aspen	<i>Populus tremuloides</i>	27*	Good
218	Trembling Aspen	<i>Populus tremuloides</i>	22, 21*	
220	Eastern White Cedar	<i>Thuja occidentalis</i>	13.5*	Good
221	Eastern White Cedar	<i>Thuja occidentalis</i>	17.5*	Good
222	Red Oak	<i>Quercus rubra</i>	12*	Good
223	Trembling Aspen	<i>Populus tremuloides</i>	25*	Good
224	Eastern White Cedar	<i>Thuja occidentalis</i>	14*	Good
225	White Ash	<i>Fraxinus americana</i>	13*	Good
226	Eastern White Cedar	<i>Thuja occidentalis</i>	15*	Good
227	Eastern White Cedar	<i>Thuja occidentalis</i>	11*	Good
228	Paper Birch	<i>Betula papyrifera</i>	15*	Good
229	White Ash	<i>Fraxinus americana</i>	30	Fair
230	White Ash	<i>Fraxinus americana</i>	41	Good
231	White Ash	<i>Fraxinus americana</i>	21, 23*	Good
232	Eastern White Cedar	<i>Thuja occidentalis</i>	21*	Good
233	Trembling Aspen	<i>Populus tremuloides</i>	29*	Good
234	Paper Birch	<i>Betula papyrifera</i>	26*	Good
235	White Ash	<i>Fraxinus americana</i>	29*	Good
236	Paper Birch	<i>Betula papyrifera</i>	18*	Good
237	Paper Birch	<i>Betula papyrifera</i>	13*	Good
238	Eastern White Cedar	<i>Thuja occidentalis</i>	16*	Good
239	Eastern White Cedar	<i>Thuja occidentalis</i>	5, 9, 9, 19, 17, 10, 8, 8*	Good
241	Eastern White Cedar	<i>Thuja occidentalis</i>	12*	Good
242	White Ash	<i>Fraxinus americana</i>	25*	Good
243	Trembling Aspen	<i>Populus tremuloides</i>	22*	Good
244	Trembling Aspen	<i>Populus tremuloides</i>	13*	Poor
245	White Ash	<i>Fraxinus americana</i>	24*	Good
246	Trembling Aspen	<i>Populus tremuloides</i>	15*	Good
247	Paper Birch	<i>Betula papyrifera</i>	13*	Good
248	Paper Birch	<i>Betula papyrifera</i>	14*	Good
248	Paper Birch	<i>Betula papyrifera</i>	14*	Good
249	Paper Birch	<i>Betula papyrifera</i>	14*	Good
250	Red Oak	<i>Quercus rubra</i>	16*	Good
251	Red Oak	<i>Quercus rubra</i>	35, 21*	Good

254	White Ash	<i>Fraxinus americana</i>	23*	Good
255	Paper Birch	<i>Betula papyrifera</i>	65, 36	Good
256	Eastern White Cedar	<i>Thuja occidentalis</i>	13, 20, 20, 7, 5, 11*	Good
257	Paper Birch	<i>Betula papyrifera</i>	65, 66	Good
257	Paper Birch	<i>Betula papyrifera</i>	65, 66	Good
258	Eastern White Cedar	<i>Thuja occidentalis</i>	14*	Good
259	Trembling Aspen	<i>Populus tremuloides</i>	85	Good
260	Eastern White Cedar	<i>Thuja occidentalis</i>	14*	Good
261	Red Oak	<i>Quercus rubra</i>	43	Good
262	Eastern White Cedar	<i>Thuja occidentalis</i>	11*	Good
263	Eastern White Cedar	<i>Thuja occidentalis</i>	15*	Good
264	Paper Birch	<i>Betula papyrifera</i>	37	Good
265	Eastern White Cedar	<i>Thuja occidentalis</i>	14*	Good
266	White Ash	<i>Fraxinus americana</i>	20*	Good
267	Eastern White Cedar	<i>Thuja occidentalis</i>	13*	Good
268	Paper Birch	<i>Betula papyrifera</i>	12, 16*	Good
269	Paper Birch	<i>Betula papyrifera</i>	50	Good
270	Eastern White Cedar	<i>Thuja occidentalis</i>	17*	Good
271	Red Pine	<i>Pinus resinosa</i>	49	Poor
272	Eastern White Cedar	<i>Thuja occidentalis</i>	14*	Good
273	Eastern White Cedar	<i>Thuja occidentalis</i>	17*	Good
274	Paper Birch	<i>Betula papyrifera</i>	40	Good
275	Eastern White Cedar	<i>Thuja occidentalis</i>	13*	Good
276	Paper Birch	<i>Betula papyrifera</i>	60, 30	Good
276	Eastern White Cedar	<i>Thuja occidentalis</i>	19*	Good
277	Eastern White Cedar	<i>Thuja occidentalis</i>	19*	Good
278	Paper Birch	<i>Betula papyrifera</i>	270	Good
279	Eastern White Cedar	<i>Thuja occidentalis</i>	14*	Good
281	Eastern White Cedar	<i>Thuja occidentalis</i>	13*	Good
282	White Ash	<i>Fraxinus americana</i>	32, 23, 30	Good
283	Paper Birch	<i>Betula papyrifera</i>	270	Fair
284	Eastern White Cedar	<i>Thuja occidentalis</i>	14*	Good
285	Eastern White Cedar	<i>Thuja occidentalis</i>	28*	Good
286	Eastern White Cedar	<i>Thuja occidentalis</i>	34, 33, 35, 17*	Good
287	Eastern White Cedar	<i>Thuja occidentalis</i>	16*	Good
288	White Ash	<i>Fraxinus americana</i>	11*	Good
289	Trembling Aspen	<i>Populus tremuloides</i>	91	Good
290	Paper Birch	<i>Betula papyrifera</i>	14*	Good
291	Cedar	<i>Thuja occidentalis</i>	42	Good
293	Red Oak		79	Good

294	Paper Birch	<i>Betula papyrifera</i>	15*	Good
295	Red Oak	<i>Quercus rubra</i>	50	Good
296	Eastern White Cedar	<i>Thuja occidentalis</i>	19, 19*	Good
297	Trembling Aspen	<i>Populus tremuloides</i>	84	Good
298	Eastern White Cedar	<i>Thuja occidentalis</i>	12*	Good
298	Eastern White Cedar	<i>Thuja occidentalis</i>	15*	Good
299	Paper Birch	<i>Betula papyrifera</i>	54	Fair
300	Eastern White Cedar	<i>Thuja occidentalis</i>	11*	Good
301	Eastern White Cedar	<i>Thuja occidentalis</i>	24*	Good
302	Eastern White Cedar	<i>Thuja occidentalis</i>	34*	Good
302A	Eastern White Cedar	<i>Thuja occidentalis</i>	15*	Good
304	Eastern White Cedar	<i>Thuja occidentalis</i>	15*	Good
305	Eastern White Cedar	<i>Thuja occidentalis</i>	17, 10, 10, 21*	Good
307	Eastern White Cedar	<i>Thuja occidentalis</i>	31	Good
308	Eastern White Cedar	<i>Thuja occidentalis</i>	16*	Good
309	Eastern White Cedar	<i>Thuja occidentalis</i>	34	Good
309	Eastern White Cedar	<i>Thuja occidentalis</i>	16*	Good
310	Eastern White Cedar	<i>Thuja occidentalis</i>	31, 12	Good
310	Eastern White Cedar	<i>Thuja occidentalis</i>	16*	Good
312	Paper Birch	<i>Betula papyrifera</i>	11*	Good
313	Trembling Aspen	<i>Populus tremuloides</i>	15*	Good
314	Paper Birch	<i>Betula papyrifera</i>	50, 44	Good
315	Eastern White Cedar	<i>Thuja occidentalis</i>	12*	Good
316	Paper Birch	<i>Betula papyrifera</i>	31, 29	Good
317	Eastern White Cedar	<i>Thuja occidentalis</i>	20*	Good
318	Trembling Aspen	<i>Populus tremuloides</i>	18*	Good
319	Eastern White Cedar	<i>Thuja occidentalis</i>	46	Good
320	Paper Birch	<i>Betula papyrifera</i>	15*	Good
321	Paper Birch	<i>Betula papyrifera</i>	33	Good
322	Eastern White Cedar	<i>Thuja occidentalis</i>	39	Good
323	Eastern White Cedar	<i>Thuja occidentalis</i>	12*	Good
324	Paper Birch	<i>Betula papyrifera</i>	17*	Good
325	Eastern White Cedar	<i>Thuja occidentalis</i>	53, 50	Good
326	White Ash	<i>Fraxinus americana</i>	37	Good
327	Paper Birch	<i>Betula papyrifera</i>	27*	Good
328	Eastern White Cedar	<i>Thuja occidentalis</i>	11, 11*	Good
329	Trembling Aspen	<i>Populus tremuloides</i>	62	Good
330	Eastern White Cedar	<i>Thuja occidentalis</i>	14, 15, 10, 10*	Good
331	White Ash	<i>Fraxinus americana</i>	70	Good
332	Eastern White Cedar	<i>Thuja occidentalis</i>	26*	Good

333	White Ash	<i>Fraxinus americana</i>	39	Good
334	White Ash	<i>Fraxinus americana</i>	35	Good
335	Trembling Aspen	<i>Populus tremuloides</i>	31*	Good
336	White Ash	<i>Fraxinus americana</i>	13*	Poor
337	Paper Birch	<i>Betula papyrifera</i>	15*	Good
338	Eastern White Cedar	<i>Thuja occidentalis</i>	32*	Good
339	White Ash	<i>Fraxinus americana</i>	42	Good
340	Paper Birch	<i>Betula papyrifera</i>	35, 27*	Good
341	Eastern White Cedar	<i>Thuja occidentalis</i>	61, 26, 56, 42, 27	Good
342	Paper Birch	<i>Betula papyrifera</i>	29*	Good
343	White Ash	<i>Fraxinus americana</i>	17*	Good
344	Red Oak	<i>Quercus rubra</i>	59	Good
345	Trembling Aspen	<i>Populus tremuloides</i>	22, 15*	Fair
346	Trembling Aspen	<i>Populus tremuloides</i>	55	Good
347	Trembling Aspen	<i>Populus tremuloides</i>	15*	Good
348	White Ash	<i>Fraxinus americana</i>	37	Good
349	Trembling Aspen	<i>Populus tremuloides</i>	11*	Good
350	White Ash	<i>Fraxinus americana</i>	15, 12*	Good
351	Trembling Aspen	<i>Populus tremuloides</i>	45	Good
352	Trembling Aspen	<i>Populus tremuloides</i>	17*	Good
353	White Ash	<i>Fraxinus americana</i>	34, 29, 16, 23, 22, 15, 27, 17	Good
354	Trembling Aspen	<i>Populus tremuloides</i>	15*	Good
355	Trembling Aspen	<i>Populus tremuloides</i>	14, 7*	Good
356	Trembling Aspen	<i>Populus tremuloides</i>		Good
356	Trembling Aspen	<i>Populus tremuloides</i>	15*	Good
357	Trembling Aspen	<i>Populus tremuloides</i>	33	Good
358	Trembling Aspen	<i>Populus tremuloides</i>	11*	Good
359	Trembling Aspen	<i>Populus tremuloides</i>	44	Good
360	Trembling Aspen	<i>Populus tremuloides</i>	41	Good
361	Trembling Aspen	<i>Populus tremuloides</i>	53	Good
362	Trembling Aspen	<i>Populus tremuloides</i>	22*	Good
363	Trembling Aspen	<i>Populus tremuloides</i>	49	Good
364	Paper Birch	<i>Betula papyrifera</i>	13*	Good
365	Trembling Aspen	<i>Populus tremuloides</i>	34	Good
366	Trembling Aspen	<i>Populus tremuloides</i>	35	Good
367	Trembling Aspen	<i>Populus tremuloides</i>	11*	Good
368	Trembling Aspen	<i>Populus tremuloides</i>	42, 28	Good
369	Trembling Aspen	<i>Populus tremuloides</i>	15*	Good
370	Trembling Aspen	<i>Populus tremuloides</i>	50, 38	Good
371	Trembling Aspen	<i>Populus tremuloides</i>	37, 48, 17, 33	Good

372	Trembling Aspen	<i>Populus tremuloides</i>	11, 79, 10	Good
373	Trembling Aspen	<i>Populus tremuloides</i>	43, 32	Good
374	Trembling Aspen	<i>Populus tremuloides</i>	12*	Good
374	Trembling Aspen	<i>Populus tremuloides</i>	12*	Good
375	Trembling Aspen	<i>Populus tremuloides</i>	51, 47, 45, 34, 46	Good
376	Red Oak	<i>Quercus rubra</i>	18*	Good
377	Trembling Aspen	<i>Populus tremuloides</i>	34	Good
378	Paper Birch	<i>Betula papyrifera</i>	30*	Good
380	Black Cherry	<i>Prunus serotina</i>	55	Good
381	Paper Birch	<i>Betula papyrifera</i>	11*	Good
382	Trembling Aspen	<i>Populus tremuloides</i>	45	Good
383	Eastern White Cedar	<i>Thuja occidentalis</i>	14*	Good
384	White Ash	<i>Fraxinus americana</i>	33	Good
385	Paper Birch	<i>Betula papyrifera</i>	30*	Good
386	Trembling Aspen	<i>Populus tremuloides</i>	47	Good
387	Red Oak	<i>Quercus rubra</i>	30*	Good
388	Trembling Aspen	<i>Populus tremuloides</i>	47	Good
390	Red Oak	<i>Quercus rubra</i>	23, 10*	Good
391	Paper Birch	<i>Betula papyrifera</i>	67, 73	Good
392	White Ash	<i>Fraxinus americana</i>	34, 35, 27*	Good
393	Trembling Aspen	<i>Populus tremuloides</i>	36	Good
394	White Ash	<i>Fraxinus americana</i>	35	Fair
395	Red Oak	<i>Quercus rubra</i>	18*	Good
396	White Ash	<i>Fraxinus americana</i>	35, 16*	Good
397	Trembling Aspen	<i>Populus tremuloides</i>	52, 18, 25	Good
398	White Ash	<i>Fraxinus americana</i>	31*	Good
399	Trembling Aspen	<i>Populus tremuloides</i>	14*	Good
400	White Ash	<i>Fraxinus americana</i>	30	Good
401	Trembling Aspen	<i>Populus tremuloides</i>	33, 31*	Good
402	Paper Birch	<i>Betula papyrifera</i>	34	Good
403	Trembling Aspen	<i>Populus tremuloides</i>	32	Good
404	White Ash	<i>Fraxinus americana</i>	16, 14*	Good
405	White Ash	<i>Fraxinus americana</i>	53	Good
406	White Ash	<i>Fraxinus americana</i>	28*	Poor
407	White Ash	<i>Fraxinus americana</i>	57	Good
408	Black Cherry	<i>Prunus serotina</i>	67	Good
409	White Ash	<i>Fraxinus americana</i>	42	Good
410	Eastern White Cedar	<i>Thuja occidentalis</i>	16, 21*	Good
411	White Ash	<i>Fraxinus americana</i>	52	Good
412	White Ash	<i>Fraxinus americana</i>	44	Poor

413	Eastern White Cedar	<i>Thuja occidentalis</i>	14*	Good
414	White Ash	<i>Fraxinus americana</i>	55	Good
415	Red Oak	<i>Quercus rubra</i>	60	Good
416	Paper Birch	<i>Betula papyrifera</i>	40*	Good
417	Eastern White Cedar	<i>Thuja occidentalis</i>	12, 21, 18*	Good
418	Red Oak	<i>Quercus rubra</i>	102, 109	Good
418	Red Oak	<i>Quercus rubra</i>	102, 109	Good
419	Red Oak	<i>Quercus rubra</i>	18, 20*	Good
420	Red Oak	<i>Quercus rubra</i>	57, 60	Good
422	Red Oak	<i>Quercus rubra</i>	87	Good
425	Eastern White Cedar	<i>Thuja occidentalis</i>	24*	Good
426	Eastern White Cedar	<i>Thuja occidentalis</i>	21, 30*	Good
427	Eastern White Cedar	<i>Thuja occidentalis</i>	72, 44	Good
431	White Ash	<i>Fraxinus americana</i>	85, 47	Good
432	Eastern White Cedar	<i>Thuja occidentalis</i>	14*	Good
434	Cedar	<i>Thuja occidentalis</i>	150	Good
435	Eastern White Cedar	<i>Thuja occidentalis</i>	12*	Good
436	Red Oak	<i>Quercus rubra</i>	89, 76	Good
437	Cedar	<i>Thuja occidentalis</i>	25*	Good
438	Paper Birch	<i>Betula papyrifera</i>	68	Good
439	Eastern White Cedar	<i>Thuja occidentalis</i>	31	Good
440	Eastern White Cedar	<i>Thuja occidentalis</i>	10, 15, 17*	Good
441	Eastern White Cedar	<i>Thuja occidentalis</i>	37	Good
442	Paper Birch	<i>Betula papyrifera</i>	16*	Good
443	Eastern White Cedar	<i>Thuja occidentalis</i>	32	Good
444	Eastern White Cedar	<i>Thuja occidentalis</i>	14*	Good
445	Trembling Aspen	<i>Populus tremuloides</i>	35, 22*	Good
446	Eastern White Cedar	<i>Thuja occidentalis</i>	23, 15*	Good
447	Eastern White Cedar	<i>Thuja occidentalis</i>	32, 22*	Good
448	Trembling Aspen	<i>Populus tremuloides</i>	23, 15*	Good
449	White Ash	<i>Fraxinus americana</i>	91	Good
450	Eastern White Cedar	<i>Thuja occidentalis</i>	15*	Good
451	Paper Birch	<i>Betula papyrifera</i>	68, 62, 67	Good
452	White Ash	<i>Fraxinus americana</i>	12*	Good
453	Trembling Aspen	<i>Populus tremuloides</i>	30	Good
454	Eastern White Cedar	<i>Thuja occidentalis</i>	16*	Good
455	Trembling Aspen	<i>Populus tremuloides</i>	60	Good
457	Trembling Aspen	<i>Populus tremuloides</i>	61	Good
458	Trembling Aspen	<i>Populus tremuloides</i>	64	Good
459	Eastern White Cedar	<i>Thuja occidentalis</i>	13*	Good

460	Red Oak	<i>Quercus rubra</i>	17*	Good
461	Eastern White Cedar	<i>Thuja occidentalis</i>	40*	Good
462	Eastern White Cedar	<i>Thuja occidentalis</i>	25*	Good
463	Eastern White Cedar	<i>Thuja occidentalis</i>	48	Good
464	Balsam Fir	<i>Abies balsamea</i>	38	Good
464	Eastern White Cedar	<i>Thuja occidentalis</i>	22*	Good
465	Eastern White Cedar	<i>Thuja occidentalis</i>	22*	Good
467	Paper Birch	<i>Betula papyrifera</i>	13*	Good
468	Eastern White Cedar	<i>Thuja occidentalis</i>	61	Good
469	Eastern White Cedar	<i>Thuja occidentalis</i>	11*	Good
470	Eastern White Cedar	<i>Thuja occidentalis</i>	11*	Good
471	Trembling Aspen	<i>Populus tremuloides</i>	43	Good
472	White Ash	<i>Fraxinus americana</i>	22*	Good
473	Eastern White Cedar	<i>Thuja occidentalis</i>	25*	Good
474	Eastern White Cedar	<i>Thuja occidentalis</i>	37	Good
475	Trembling Aspen	<i>Populus tremuloides</i>	69	Good
475	Eastern White Cedar	<i>Thuja occidentalis</i>	28*	Good
477	Eastern White Cedar	<i>Thuja occidentalis</i>	36	Good
478	Black Cherry	<i>Prunus serotina</i>	22*	Good
479	Eastern White Cedar	<i>Thuja occidentalis</i>	15*	Good
480	Eastern White Cedar	<i>Thuja occidentalis</i>	39, 20, 32, 53	Good
481	Trembling Aspen	<i>Populus tremuloides</i>	39	Good
482	Black Cherry	<i>Prunus serotina</i>	34	Good
484	Black Cherry	<i>Prunus serotina</i>	33	Good
485	Paper Birch	<i>Betula papyrifera</i>	31, 29*	Good
486	Paper Birch	<i>Betula papyrifera</i>	14*	Good
487	Paper Birch	<i>Betula papyrifera</i>	14*	Good
488	Red Oak	<i>Quercus rubra</i>	47	Good
489	Eastern White Cedar	<i>Thuja occidentalis</i>	138	Good
490	Eastern White Cedar	<i>Thuja occidentalis</i>	45	Good
491	Eastern White Cedar	<i>Thuja occidentalis</i>	21, 17*	Good
491	Paper Birch	<i>Betula papyrifera</i>	61	Good
492	Paper Birch	<i>Betula papyrifera</i>	21*	Good
493	Eastern White Cedar	<i>Thuja occidentalis</i>	23*	Good
493	Paper Birch	<i>Betula papyrifera</i>	36	Good
494	Paper Birch	<i>Betula papyrifera</i>	34, 19, 40	Good
495	Eastern White Cedar	<i>Thuja occidentalis</i>	25, 30*	Good
496	Eastern White Cedar	<i>Thuja occidentalis</i>	36	Good
497	Paper Birch	<i>Betula papyrifera</i>	52	Good
498	Eastern White Cedar	<i>Thuja occidentalis</i>	33	Good

499	Eastern White Cedar	<i>Thuja occidentalis</i>	33	Good
500	White Ash	<i>Fraxinus americana</i>	138, 157, 133, 136, 165	Good
501	Red Oak	<i>Quercus rubra</i>	248	Good
502	Eastern White Cedar	<i>Thuja occidentalis</i>	48, 57	Good
503	Paper Birch	<i>Betula papyrifera</i>	25*	Good
504	Paper Birch	<i>Betula papyrifera</i>	42	Good
505	Eastern White Cedar	<i>Thuja occidentalis</i>	17*	Good
506	Eastern White Cedar	<i>Thuja occidentalis</i>	20, 25, 27*	Good
507	Paper Birch	<i>Betula papyrifera</i>	60, 617*4	Good
508	Red Oak	<i>Quercus rubra</i>	36	Good
509	Eastern White Cedar	<i>Thuja occidentalis</i>	31	Good
510	Eastern White Cedar	<i>Thuja occidentalis</i>	52	Good
512	Eastern White Cedar	<i>Thuja occidentalis</i>	49	Fair