

A Biological Survey of Woody Plants In the
Proposed
Hundred Acres Quarry Park

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INTRODUCTION

Located to the immediate southwest of the city of Waite Park, Stearns County, Minnesota, "Hundred Acres Quarry" is undergoing development as a new county park (Fig. 1). During its conversion to a county park, the Stearns County Parks Department has encouraged various biological, geological, and other pertinent studies of the area's features. In late spring of 1993, I agreed to conduct a survey of the woody plants of the park, formulating a checklist to be used in future research and for possible use by park visitors.

The Stearns County Park Commission (1994) notes that Hundred Acres Quarry "contains about two hundred and twenty acres of land, twenty quarries with water, and four without water." From personal correspondence with Charles B. Wocken, Stearns County Parks Director, I learned that the park was quarried for Saint Cloud red granite, at least in part, until the 1950's, possibly later, and that it was used in some parts for hay farming. Also, according to Wocken, clear-cutting occurred early in the area's use for quarrying, both to expose sites of granite bedrock and to fuel the machines used in quarrying operations. Wocken also stated that the previous owner, Cold Spring Granite, Inc., replanted various areas of the park, most notably the pine plantation located in its southwestern corner (Sect. H). Thus the park's woody botanical features include possible remnants from before logging, as well as species that were either planted or which invaded sites exposed by logging and quarrying operations.

I did not know the vegetative history of the area. However, Stearns County lies just to the north of an area traditionally known as the "Big Woods", and at one time contained oak savannah. From this, and from living in the area, I expected hardwoods such as *Quercus* spp., Oaks; *Acer* spp., Maples; *Tilia americana* L., Basswood; *Prunus serotina* Ehrh., Black Cherry; *Ulmus* spp., Elms; and *Populus* spp., Aspens and Cottonwoods; as possible major tree species. From photographic maps, I saw that there were low areas which could contain various *Salix* spp., *Cornus* spp., and other plants preferring moist conditions. Exposed bedrock and piles of granite waste-rock suggested more xeric conditions, which could

Abstract

A former site of granite quarrying, "Hundred Acres Quarry" contains several distinct and diverse habitats, with diverse botanical characteristics. I made a preliminary study of the woody plants of this new Stearns County park, located in southern Waite Park, Minnesota, to learn what trees, shrubs, and woody vines are found within the park. I assessed their relative abundance and their distribution within the park. Fifty-eight species were identified to a high degree of certainty. In addition, I surveyed the literature and listed various economic and ethnobotanical uses for these species, to form an interpretative guide. This research was conducted using methods and materials that would allow comparison and future research with work done by the Minnesota Department of Natural Resources (DNR), and serves as a baseline for future park research.

Key Words: Ethnobotany, diversity, park development, Minnesota, Stearns County.

contain species suited to those conditions, such as some *Rubus*. Abandoned fields suggested the possibility of pioneer plants (such as *Populus* spp. colonies, *Quercus* spp. seedlings, etc). Also, because of the many quarries, trails, old fields, wetlands bordering woods, and other openings throughout the park, I expected edge species to be quite common. I did not know what edge species to expect except that there would be many shrubs.

MATERIALS AND METHODS

Hundred Acres Quarry Park has been divided into eleven distinct sections, which are largely the result of geological, biogeographical, and human-constructed features (roads, quarries, piles of waste granite [grout]) The sections included in this study are A, D, F - J, and a portion of section K (Fig. 2). These sections contain a diverse range of conditions, such as wetlands, old fields, and expanses of exposed bedrock.

On August 29 and 30; September 4, 9, 12, 17, 23, 27, and 30; and October 1 and 3, 1993, I collected specimens of woody plants from the study site. In each section I collected at least one of each species of woody plant encountered, making a note of its habitat, growth structure (tree, shrub, big, small, etc.), abundance, and other features deemed important. In general, I only collected one of each well known species or of those species with distinguishing characteristics, such that once identified I could tell from my notes where that species was located elsewhere in the park. However I noted the presence of such species with relevant information (habitat, abundance, etc.) when found elsewhere in the park, making further collections under special circumstances. If I found a plant in only one or very few sites, I considered it to be very uncommon. If it had few individuals or sites, I considered it to be uncommon, and if it was present in large amounts, either in large sites or as many individuals, I considered it to be a common plant (within the confines of the park).

I took collected specimens to the Saint John's University/College of St. Benedict Herbarium (CSB) in Collegeville, Minnesota, pressed them and then stored them for future

inclusion into the herbarium collection. I identified unknown species using various field guides and keys (Gleason 1952, Gleason and Cronquist 1991, Muenscher 1950, Petrides 1986, Rosendahl 1928, Sargent 1949, Severin 1980), herbarium specimens, and with some assistance from Dr. N. Zaczkowski, Professor of Biology, and Dr. Stephen Saupe, Associate Professor of Biology, at St. John's. Since collection occurred from early to mid-Fall, I had to base identifications on vegetative features and, when present, fruits as well. Up to three specimens per species were then mounted. In order to avoid possible confusion caused by multiple synonyms for the scientific names of species, I used G.B. Ownbey and T. Morley's Vascular Plants of Minnesota: A Checklist and Atlas (1991) as a standard source for names. This is also the official name source for the State of Minnesota, based on specimens found in the University of Minnesota Herbarium (MIN).

RESULTS

Fifty-eight species were identified with a high degree of certainty (see Table 1). Also listed in Table 1 are short descriptions of the general habitat(s) of various species (as listed in my field notebook), as well as rough estimates (based on sight observations of their relative abundance). For example, *Vaccinium angustifolium* Ait. (Low bush blueberry), only found at one location next to a trail cutting through some low woods, is labelled VU (Very uncommon). Also, identified plant specimens are listed with their collection numbers in Appendix 1, for future reference by park researchers who may wish to compare specimens or to further check my identifications.

Some specimens could not be identified to the species level at a high degree of certainty. These specimens are listed in Table 2, with some possible names arrived at from keying or comparison to herbarium specimens. One example would be *Aronia* sp., where the specimen exhibited characteristics of *A. arbutifolia* (L.) Ell., but Ownbey and Morley (1991) only list *A. melanocarpa* (Michx.) Ell. as native to this area. Since it is possible that this represents an escapee, but no matching herbarium specimen could be found at this time, it has been placed into Table 2. Other examples include many *Salix* spp. Although several

willows were positively identified, there were several others for which an either/or choice existed, or for which no herbarium specimen or other certain aid to identification could be found. In such cases further collections and notes on habitat and growth habit should be made, if possible during the early spring in order to incorporate floral characteristics in the identification process. Similar situations exist for various *Rosa* spp., *Rubus* spp., *Ribes* spp., etc. Unidentified specimens are located in the St. John's University/College of St. Benedict Herbarium with identified specimens.

It should also be noted that in the case of *Crataegus* spp., or Hawthorns, I have only identified collected shrubs to the genus level and placed them into Table 1 with plants identified to the species level. This is due to the degree of conflict between various authors as to the number and distribution of species within the genus. Severin (1980) lists nine species of *Crataegus* as occurring within Minnesota. Ownbey and Morley (1991) list thirteen species of *Crataegus* found in the official Minnesota state collection, with a wealth of synonyms. Rosendahl (1928) places eleven species of *Crataegus* in Minnesota. He notes "The genus [*Crataegus*] offers great taxonomic difficulties and it is impossible at present to say how many species it includes." Rosendahl also notes a high degree of hybridization in *Crataegus*. Muenscher (1950) does not even attempt to key the species, merely listing twenty northeastern species in an appendix. In all likelihood it will take someone with greater expertise in identification of this problematic genus to gain an exact listing of its species.

Based on my identifications, and using the Minnesota Department of Natural Resources (DNR) (1993) guidelines for classifying for the plants communities of Minnesota, I have attempted to determine the designation for communities found in each studied section of the park. I could not key out communities to the subtype level (Emergent Marsh, subtype Cattail Marsh; Shrub Swamp, subtype Willow Swamp, etc.), since exact designations at times required knowledge of herbaceous plants, or the exact percentage of certain types of woody plants in the communities. And in various areas it appears that different community types blend together. However, some possible designations, and other pertinent site

information based on my notes, are:

Sect. A: Contains a low wetlands in the northern third with low wooded areas elsewhere, with openings due to the presence of a large water-filled quarry, a granite waste pile (grout), and trails. Appears to be a mixture of Shrub Swamp, Emergent Marsh, and possibly Aspen and Oak Woodland-Brushland.

Sect. D: Contains low woods in its eastern half, typified by an aspen stand, aspen and hardwoods at varying elevations elsewhere, a large water-filled quarry with an accompanying granite pile in the north, and gradually changes to drier conditions in its southwest corner. Aspen Woodland, turning to Oak Woodland-Brushland.

Sect. F: Hardwoods (mostly low) make up the majority of the section, with an open, low area in its westernmost fifth. It has several openings in the hardwoods due to granite piles and quarries. Oaks appear similar in size, many *Prunus serotina* Ehrh. and *Acer spp.* in the understory, indicating Oak Woodland-Brushland. It also contains an interesting Rock Outcrop primary community on exposed granite, suggesting a meeting point between Minnesota's Northeast (NE) and Southwest (SW) primary community types, as classified by the Minnesota DNR (1987). Both fruticose lichens (NE) and *Opuntia fragilis* (SW) are present on the same site, even growing next to each other.

Sect. G: An old field once used as a hayfield, this section is drier than its bordering sections, with a lower area along its western edge. Its edges appear to be under gradual invasion by various *Quercus* and *Populus* species. Old field is not a native community designation, however there may be herbaceous species typical of Oak Savannah or Brush Prairie. This study did not include such identifications.

Sect. H: The main feature of this section is a large stand of planted *Pinus resinosa* Ait. (Red Pine), which is typically dry. There is a low wetlands area along its western edge and northwestern corner. It does not have an overall designation, since it is not a native

community.

Sect. I: This section is typified by several water-filled quarries, exposed granite bedrock, granite piles, many trails (including main park roads as its eastern and southern borders), and hardwoods, including oaks, at varying elevations, suggesting **Oak Woodlands-Brushland**.

Sect. J: Except for an old field in its northwest corner near the park entrance, it contains mostly mixed hardwoods at varying conditions, from the higher ground in the northwest, **Oak Woodlands-Brushland** to lower conditions, containing ashes in the canopy near its eastern border with a wetlands, suggesting **Lowland Hardwood Forest**.

Sect. K: A wetlands overall, this section is a continuation of the wetlands in A which passes out of the park and reenters at K's northern boundary. It is an **Emergent Marsh** overall, but it was not noted whether it was of the **Willow** or **Cattail** type.

These labels should not be accepted as complete designations, as past and present human activities may have modified the park such that communities have not had a chance to redevelop as it would without human pressures. Also, how a community is classified may also depend on what scale is used by the DNR for measurements. This serves as a temporary guideline only. In order to obtain exact designations for the communities in Hundred Acres Quarry, which would be in line with Minnesota DNR guidelines, standardized vegetative plot samples need to be made. The sampling format most in line with state requirements would be the Releve method, such as outlined by Almendiger (1987).

After I identified the various species, I surveyed the literature for sources listing the various economic uses and possible human dangers of each plant. This survey has been summarized in Table 3. One example of a common plant with many uses is *Rhus glabra* L., Smooth Sumac. Its fruits make a cool drink, can be used for sore throats, are used in dyes, and are an important winter food source for wildlife. Its leaves can be used as a tobacco

substitute, and its wood can be used for various craft projects. An example of a dangerous plant is *Rhus radicans* L., the inspiration of the famous phrase "Leaflets three, let it be." The various uses outlined by Table 3 have also been summarized and separated into individual tables: Table 4, Plants with Dangerous Properties; Table 5, Plants Used as Food; Table 6, Plants of Traditional Medicinal Value; Table 7, Plants Used for Dyeing; Table 8, Plants Noted for Useful Timber; and Table 9, Plants of Noted Usefulness to Wildlife and Wildlife Conservation. Tables 3 - 9 together form an Interpretative Guide which may be of use to park personnel and visitors, subject to revision.

Since the Interpretative Guide (Tables 3-9) may be used by personnel and visitors who may not know the scientific names of woody plants, or may know them by a synonym other than those used officially in Minnesota, I have included various common names, both from Ownbey and Morley (1991) and other sources as needed.

DISCUSSION

An important point to consider, as mentioned in the introduction and elsewhere, is the level at which human activities have modified or otherwise affected the types and distribution of plants in Hundred Acres Quarry. Past public land surveys show that, at least up to 1907, central Stearns County was a meeting point of several prominent communities (Wendt and Coffin 1988). These include Oak woodland-Brushland, Maple-Basswood Forest, Upland Prairie, and to a lesser degree, Prairie Wetland. Apparently surveys done at the time did not note the presence of primary communities in Minnesota.

Looking at Hundred Acres Quarry, one sees that Oak Woodland-Brushland, typified by Bur and Northern Pin Oak with some *Populus sp.* indeed is an important component of the park. The presence of *Q. rubra* L., Red Oak, with *Prunus serotina* Ehrh., especially in Section F, is an indicator of Oak Forest. Not surprisingly, *Acer sp.* saplings, small trees, and some now entering the canopy, indicates succession in progress. This would usually lead to Maple-Basswood Forest; however I noted the presence of Basswood in only one location,

near the north-west entrance of the park. Another important indicator plant of past plant communities in the area is *Amorpha canescens* Pursh., Leadplant, which is an indicator of former Upland Prairie (from personal correspondence with Dr. S. Saupe and Dr. M. Wood of the College of St. Benedict and St. John's University Biology Department).

Disturbance has played a major role in the distribution of woody plants throughout Hundred Acres Quarry. Sect. H has been planted with Red Pine, which is not native to this area. Also not native to this area is *Robinia pseudo-acacia* L., Black Locust, which can be seen at the boundary of sections D and G. *Rhamnus cathartica* L., Common Buckthorn is a European tree/shrub, which appears to have become naturalized in Hundred Acres Quarry, particularly among the hardwoods of sections J, I, and F. Another indicator of disturbance, *Zanthoxylum americanum* Mill., Prickly Ash, can be found along human-made trails in sections D and I. Also, quarries, rock piles, fields, roads, trails, etc., have all opened up large areas, clearly visible on the maps I used to conduct this study (Fig. 1). I went in to Hundred Acres Quarry expecting edge species to be quite common, and I was not disappointed. Although natural edges do exist, such as at the boundaries between wetlands and hardwoods, human activity appears to have expanded these communities.

Some intriguing and unexpected species were found. *Vaccinium angustifolium* Ait., Lowbush Blueberry, is a more northeasterly species, preferring more acidic soils, as found in coniferous hardwoods. Yet a patch was found along a trail in section F. Section F also yielded a most intriguing primary community (as stated in Results), which contains fructicose lichens, which are more common in northeast Minnesota, and *Opuntia fragilis* (Nutt.) Haw., which is a plant found most commonly in the state on rocky outcrops in the southwest. This may be due to differences in soil chemistry, perhaps due to the presence of grey granite bedrock in Section F that is not found elsewhere in the park.

Based on official state distribution maps prepared by the University of Minnesota Herbarium (MIN) (Ownbey and Morley 1991), the population of *O. fragilis* (Nutt.) Haw. found in Section of Hundred Acres Quarry represents the northernmost population in the

state. This may change with data supplied by such efforts as the Minnesota DNR County Biological Survey and does not represent those populations possibly noted in non-University of Minnesota collections. However, to ensure recognition of the uniqueness of the site, I placed specimens into the the official state collection.

To conclude, Hundred Acres Quarry Park contains many interesting woody plants. Many were expected based on what may be found in Stearns County and surrounding Central Minnesota. However, the presence of some species was surprising, and their limitation to certain distinct areas of the park may indicate some intriguing ecological features that would lend themselves well to future study. My identifications serve as a basis for such more intensive work. As researchers with greater taxonomic experience study problematic genera for which my skills did not suffice, and as more intensive studies of the park's flora are done, the checklist of woody plants of Hundred Acres Quarry is certain to grow and become more definitive.

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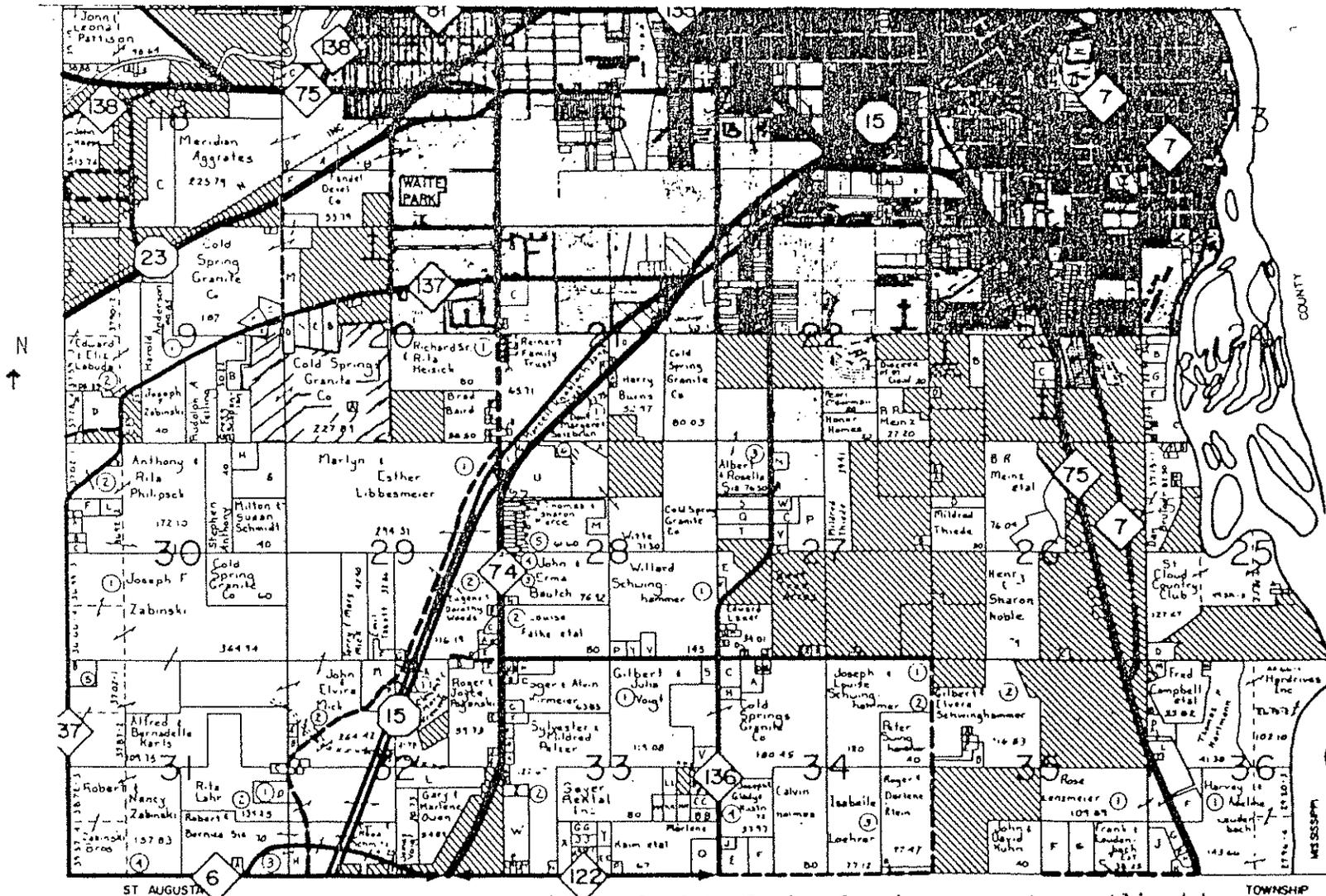


Fig. 1 - Hundred Acres Quarry Park (formerly Cold Spring Granite property, outlined by ) , in relation to major roads (numbers outlined by diamonds and octagons), properties, the St. Cloud metro area, and Waite Park. Map courtesy of C. Wocken, Stearns County Parks Department.

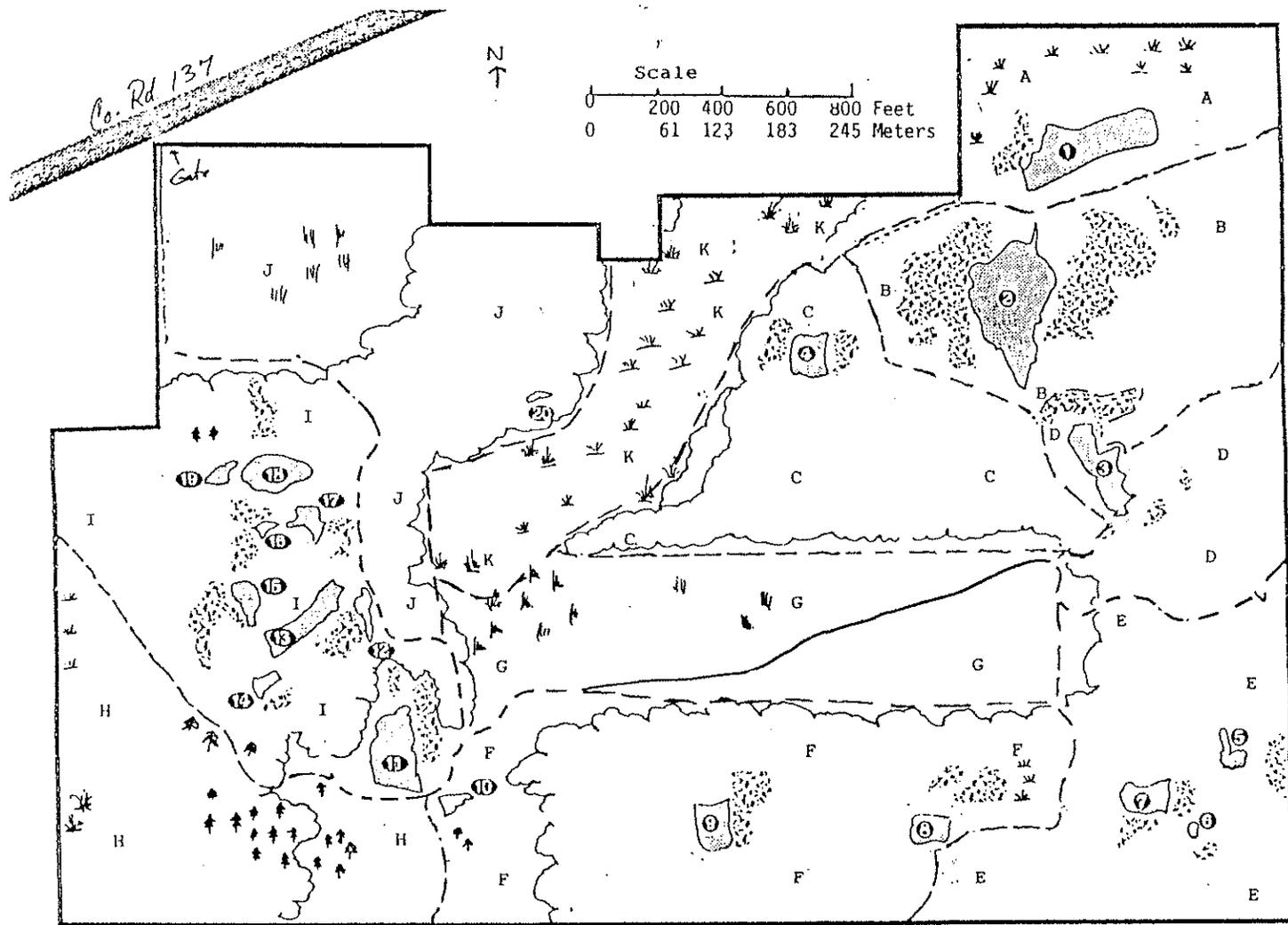


Fig. 2 100 Acres Quarry Park, with quarries marked numerically, sections alphabetically, ---- = boundaries.
 Map courtesy of Charles B. Wocken, Stearns County Parks Department.

- Wetland
- Grassland
- Pine Grove

10/10/03

Table 1: List of Woody Plants with Estimated Relative Abundance and Habitats

VU: Very Uncommon (Very few small sites or individuals)
 U: Uncommon (Few sites or individuals)
 C: Common (Many sites or individuals)
 ND: Not Determined

TAXON	ABUN.	HABITAT, IF KNOWN
GYMNOSPERMS		
CUPRESSACEAE <i>Juniperus virginiana</i> L.	U	Found in somewhat exposed, drier areas.
PINACEAE <i>Pinus resinosa</i> Ait.	C	Found in plantation (Sect. H), some by north and south borders of Sect. I, west edge of Sect. F.
ANGIOSPERMS		
ACERACEAE <i>Acer negundo</i> L. <i>A. rubrum</i> L.	U C	Appears to be an edge tree. Variable sized trees in variable light and moisture conditions.
<i>A. saccharum</i> Marsh.	C	Hardwoods, some as canopy, saplings often in understory.
ANACARDIACEAE <i>Rhus glabra</i> L.	C	Edge shrub, esp. by fields, apparently drier areas.
<i>Rhus radicans</i> L.	C	
BETULACEAE <i>Alnus incana</i> (L.) Moench	ND	Most in open, low, swampy areas, one noted in old field.
<i>Betula papyrifera</i> Marsh.	C	Moist conditions, but not directly in forest floor, often growing out of rock piles near quarries, or near or hanging from quarry edges.
<i>Corylus americana</i> Walt.	ND	Possible edge shrub of low areas.
CACTACEAE <i>Opuntia fragilis</i> (Nutt.) Haw.	VU	One site only, exposed granite bedrock, xeric.
		CONTINUED

Table 1, Cont.: List of Woody Plants with Estimated Relative Abundance and Habitats

TAXON	ABUN.	HABITAT, IF KNOWN
CAPRIFOLIACEAE		
<i>Diervilla lonicera</i> L.	C	Edge shrub, often near quarry rims.
<i>Lonicera tatarica</i> L.	C	Trailside shrub in open areas.
<i>Sambucus pubens</i> Michx.	VU	One site by edge of quarry.
<i>Viburnum lentago</i> L.	C	Low, at least somewhat open areas.
<i>V. rafinesquianum</i> Schultes	C	Open and understory, moist and dry conditions.
<i>V. trilobum</i> Marsh.	VU	One site noted, very low area.
CELASTRACEAE		
<i>Celastrus scandens</i> L.	VU	One site, edge, near fenceline.
CORNACEAE		
<i>Cornus foemina</i> Mill.	C	Moist, rich, open areas.
<i>C. rugosa</i> Lam.	U	More shaded areas than above, low woods
<i>C. stolonifera</i> Michx.	U	Very low, open areas.
ERICACEAE		
<i>Vaccinium angustifolium</i> Ait.	VU	One site, trailside, somewhat shaded moist woods.
FAGACEAE		
<i>Quercus alba</i> L.	VU	Moist soil, trailside.
<i>Q. ellipsoidalis</i> E.J. Hill	C	Hardwoods, variable moisture. If saplings, then usually only seen invasive of edges.
<i>Q. macrocarpa</i> Michx.	C	Hardwoods, sandier soils (?).
<i>Q. rubra</i> L.	C	Hardwoods, moister than above (?).
LEGUMINOSAE		
<i>Amorpha canescens</i> Pursh	C	Trail/roadside
<i>Robinia pseudo-acacia</i> L.	VC	One site, sandy field edge.
OLEACEAE		
<i>Frazinus nigra</i> Marsh.	U	Low wet woods, bordering wetlands.
<i>F. pennsylvanica</i> Marsh.	C	Low areas, also some drier than above.
<i>Syringa vulgaris</i> L.	VU	One stand sandy field's edge.
RHAMNACEAE		
<i>Ceanothus americanus</i> L.	C	Edge or trailside, var. moisture.
<i>Rhamnus cathartica</i> L.	C	Interior trees of hardwoods.
CONTINUED		

Table 1, Cont.: List of Woody Plants with Estimated Relative Abundance and Habitats

TAXON	ABUN.	HABITAT, IF KNOWN
ROSACEAE		
<i>Crataegus sp.</i>	U	One in rockpile center of field, others in clearings, hollows.
<i>Prunus americana</i> Marsh.	VU	One specimen, field/woods edge.
<i>P. serotina</i> Ehrh.	C	Interior tree of hardwoods.
<i>P. virginiana</i> L.	C	Trailside.
<i>Rosa arkansana</i> Porter	ND	One specimen location unknown. A second trailside near fence.
<i>R. blanda</i> Ait.	C	Road/trailside, edges.
<i>Rubus strigosus</i> Michx.	C	Trailside, edges, variable moisture.
<i>Spiraea alba</i> Du Roi	U	Among exposed rock, cracks in rock face, although some noted at swamp's edge.
RUTACEAE		
<i>Zanthoxylum americanum</i> Mill.	U	Interior along trail (some sun from broken canopy) or trail's edge by a quarry, moist.
SALICACEAE		
<i>Populus balsamifera</i> L.	U	Interior stands, moist areas.
<i>P. deltoides</i> Marsh.	C	Usually as individuals, low areas.
<i>P. grandidentata</i> Michx.	C	Field's edge, around quarries, very common towards east end of park.
<i>P. tremuloides</i> Michx.	C	Usually in stands, usually low areas.
<i>Salix candida</i> Flügge	C	Low, wet open areas.
<i>S. discolor</i> Muhl.	C	Low, wet open areas.
<i>S. exigua</i> Nutt.	C	Low, wet open areas.
<i>S. gracilis</i> Anderss.	C	Low, wet open areas.
SAXIFRAGACEAE		
<i>Ribes americanum</i> Mill.	C	Noted usually "among rocks", well-drained areas, up in rock piles.
TILIACEAE		
<i>Tilia americana</i> L.	VU	One site, field/wood edge.
		CONTINUED

Table 1, Cont.: List of Woody Plants with Estimated Relative
Abundance and Habitats

TAXON	ABUN.	HABITAT, IF KNOWN
ULMACEAE		
<i>Celtis occidentalis</i> L.	VU	Somewhat wet soil near a water-filled quarry and trail, near <i>Vitis riparia</i> .
<i>Ulmus americana</i> L.	U	Growing out of a small rockpile.
<i>U. pumila</i> L.	U	One roadside, several at top of grout pile.
<i>U. rubra</i> Muhl.	C	Often found among rocks.
VITACEAE		
<i>Parthenocissus inserta</i> (Kerner) Fritsch	C	Growing up into trees in woods, also noted in grout piles.
<i>Vitis riparia</i> Michx.	C	Twined in trailside brush, tall vines in trees in wooded areas.

Table 2: List of Some Possible Woody Plants,
Based on Problematic Identifications

TAXON	NOTES
ACERACEAE <i>Acer saccharinum</i> L.	One specimen exhibits characteristics of this and of <i>A. rubrum</i> as well.
BETULACEAE <i>Betula papyrifera</i> Marsh.	Some specimens found which may be <i>B. papyrifera</i> , <i>B. nigra</i> L., or perhaps other members of the genus.
<i>Ostrya virginiana</i> (Mill.) K. Koch	Possible, based on several specimens.
CAPRIFOLIACEAE <i>Lonicera x bella</i> Zabel <i>L. morrowi</i> Gray	These species problematic, since <i>L. x bella</i> is a cross between <i>L. morrowi</i> and <i>L. tatarica</i> L. . Hard to tell the difference between them.
CORNACEAE <i>C. stolonifera</i> Michx.	Some positively identified as this, but some not quite similar enough for certainty.
FAGACEAE <i>Quercus</i> sp.	One found that may be <i>Q. macrocarpa</i> Michx. seedling, or else possibly <i>Q. bicolor</i> Willd.
OLEACEAE <i>Frazinus americana</i> L.	Some specimens exhibit features of this as well as of <i>F. pennsylvanica</i> Marsh. .
RHAMNACEAE <i>Rhamnus alnifolia</i> L'Hér	Some "shrubby" <i>Rhamnus</i> specimens may be this.
ROSACEAE <i>Aronia melanocarpa</i> (Michx.) Ell. <i>A. arbutifolia</i> (L.) Ell. ¹	This and following based on same specimen. However, <i>A. arbutifolia</i> not listed in this state. Perhaps an escapee?
	CONTINUED

Table 2, Cont.: List of Some Possible Woody Plants,
Based on Problematic Identifications

TAXON	NOTES
<p>ROSACEAE (Cont.) <i>Prunus pennsylvanica</i> L. f. <i>P. tomentosa</i> Thunb.¹</p>	<p>Possible specimen found. Small specimen exhibits characteristics of this. <i>P. tomentosa</i> not listed by Ownbey and Morley (1991), but is cultivated in this area.</p>
<p><i>Rosa acicularis</i> Lindl. <i>R. macounii</i> Greene <i>R. rugosa</i> Thunb.</p>	<p>Several specimens may be this. Possible. Some tall (over 2m) plants possibly this.</p>
<p><i>Rubus</i> sp.</p>	<p>Many <i>Rubus</i> found of all types: dewberries, blackberries, raspberries. Most too difficult to i.d. to certainty. Perhaps <i>R. allegheniensis</i> Porter, <i>folioflorus</i> Bailey, <i>pensilvanicus</i> Poir., or <i>rosendahlia</i> Bailey, to name a few.</p>
<p><i>Sorbaria sorbifolia</i> (L.) A. Br.</p>	<p>One specimen identified to this, nothing available for comparison.</p>
<p><i>Spiraea</i> sp.</p>	<p>Specimen not <i>S. alba</i> Du Roi, perhaps an escaped ornamental, may be <i>S. thunbergii</i> Sieb ex. Blume¹.</p>
<p>SALICACEAE <i>Salix</i> sp.</p>	<p>Many hard to identify <i>Salix</i> specimens. Possible list follows at left.</p>
<p><i>S. alba</i> L. <i>S. amygladoides</i> Anderss. <i>S. babylonica</i> L.¹ <i>S. bebbiana</i> Sarg. <i>S. candida</i> Flügge <i>S. discolor</i> Muhl. <i>S. humilis</i> Marsh. <i>S. pyrifolia</i> Anderss.</p>	<p>Note: Some of these are listed in Table 1, as positive i.d.'s. If listed again here, this is due to specimens with "half-and-half" characteristics between two or more different <i>Salix</i> species.</p>

¹ Some cultivated species are not listed in Vascular Plants of Minnesota: A Checklist and Atlas (Ownbey and Morley 1991). Scientific names for these are those found in Trees and Shrubs of Minnesota (Rosendahl 1928).

TABLE 3
Economic Uses of Woody Plants Found in Hundred Acres Quarry

KEY

- ♣ Possibly dangerous.
- € Use as food.
- R_x Medical uses.
- ~ • Uses for dyeing.
- Industrial and construction uses.
- W Usefulness to wildlife, wildlife conservation.
- O Other uses not listed above.

GYMNOSPERMS

CUPRESSACEAE

Juniperus virginiana L.—Eastern Red Cedar

♣ “All parts may be toxic” (Foster 1990), “Juniper ‘berries’... are known to cause kidney irritation, uterine contractions, and possible miscarriage in pregnant women” (Turner and Szczawinski, quoting Tyler 1987).

—€ “Indians used to dry and grind juniper berries and use them for cake and mush... [and] sometimes roasted and used as a coffee substitute” (Angier 1974). Sprigs can be used as a tea (Angier 1974). Juniper berries are essential in the preparation of gin.

R_x It is reported that a diuretic can be prepared from the fruit juice (Angier 1974). Fruit tea and leaf smoke reported used by Native Americans for throat ailments, fruit for canker sores, and may have an anti-cancer agent (Foster 1990).

○ ~ • The inner bark reportedly used by the Ojibwe for red dyes (Densmore 1974).

□ Reported uses include trims, fence posts, in chests and in closets (Brown and Panshin 1940).

W “An excellent conifer for wildlife”, provides shelter, food, and nesting sites, rated “excellent” for wildlife landscaping by the Minnesota Department of Natural Resources (hereafter referred to as the Minnesota DNR) for cover and winter food (Henderson 1987).

In his description of the plant, Petrides (1986) notes use of the plant by over fifty species of birds.

O Oil extracted from leaves used in perfume (Angier 1974). Reported used for making mats by the Ojibwe (Densmore 1974).

PINACEAE

Pinus resinosa Ait.—Red Pine

—E “The entire pine family comprises one of the most vital groups of wild edibles in the world (Angier 1974). Angier, as well as Fernald, Kinsey, and Rollins (1958) state that the inner bark of pines, both eaten and raw, can be used as an emergency food, and according to Angier “[have] saved hundreds of people from starvation.” Angier also reports that Native Americans and colonists made bark strips into a spaghetti-like dish and flour, ate the needles (boiled, chewed, for a vitamin C rich tea), and ground up young cones as a flavor additive.

□ Reported uses include pulpwood, construction, railroad ties, boxes, and trims (Brown and Panshin 1940).

W Used as food and cover by wildlife (Angier 1974, Henderson 1987), has an “excellent” rating for wildlife landscaping by the Minnesota DNR (Henderson 1987).

O The tufts of the needles reportedly used by the Ojibwe for making toys and dolls, and the rest of the tree for other general utility uses (Densmore 1974).

ANGIOSPERMS

ACERACEAE

Acer spp.—Maples

—€ The saps of all *Acer sp.* are reported tappable and useful for making sugar and syrup, and were major food plants for Native Americans (Fernald, Kinsey and Rollins 1958).

○ ~ • Bark of the various elders and maples reported to yield pink to tan dyes (Dunsmore 1979); the rotted wood reportedly used by the Ojibwe for purple dyes (Dunsmore 1974).

Acer negundo L.—Box-elder

—€ Sap can be used to make syrup (Foster 1990, Hall 1976, Medsger 1939).

R_x Inner-bark tea used by Native Americans to induce vomiting (Foster 1990).

□ In his description of Box-Elder, Petrides (1986) notes its use for boxes and similar uses.

W Rated “excellent” by the Minnesota DNR for wildlife landscaping as habitat for various butterfly species’ caterpillars, “good” as a source of cover (Henderson 1987).

A. rubrum L.—Red Maple

—€ Sap can be used for syrup (Medsger 1939).

□ Similar uses to *A. saccharum* reported, except not as strong (Brown and Panshin 1940).

W Rated “good” by the Minnesota DNR for wildlife landscaping as a source of cover (Henderson 1987).

A. saccharum Marsh.—Hard Maple, Sugar Maple

♠ The seeds may be inedible (Stephen Saupe, Personal Communication).

—€ The leading producer of maple syrup (Dunsmore 1979, Medsger 1939). The bark, and leaves of all maples are reported edible; also, Native Americans reportedly hulled and boiled larger seeds (Angier 1974). The sap can also be drunk straight (Hall 1976, Medsger 1939). Maple sugar has also reportedly been one of the two most important foods for the Ojibwe, the other being wild rice (Dunsmore 1974).

R_x Inner bark tea used by Native Americans "for coughs, diarrhea; diuretic, expectorant," and syrup used for coughs (Foster 1990).

□ The wood is valuable for timber (Angier 1974, Brown and Panshin 1940, Medsger 1939). Reported uses include railroad ties, fuelwood, furniture, flooring, and even bowling pins and billiard cues (Brown and Panshin 1940). Reportedly used by the Ojibwe for paddles and other uses (Densmore 1974).

W Rated "good" by the Minnesota DNR for wildlife landscaping as a source of cover (Henderson 1987).

ANACARDIACEAE

Rhus glabra L.—Smooth Sumac

—€ The fruit is rich in Vitamin A, and reportedly has been used to make a summer sumac-ade by Native Americans and since (Angier 1974, Hall 1976).

R_x Reported used by Native Americans for many medical conditions, including the use of berries to stop children's bedwetting, and smoking the leaves to relieve asthma (Foster 1990), and the flowers used in a tea with *Heuchera sp.* for sore throats (Densmore 1974). The boiled berries are also reportedly used for sore throats (Hall 1976).

○ ~ • Useful for dyes, esp. red fruit, best if collected before frost (Bliss 1980, Dunsmore 1979) The inner bark reported used by the Ojibwe for dyeing as well (Densmore 1974).

□ Wood reported used for "small objects such as napkin rings and picture frames" (Angier 1974).

W Food source for wildlife (Angier 1974). Rated "excellent" by the Minnesota DNR for wildlife landscaping as a winter food source (berries) (Henderson 1987).

O Leaves reportedly used as a tobacco substitute by the Gosiute, Chippewa, Dakotah, Comanche, and others (Dunsmore 1979).

R. radicans L.—Poison Ivy

♣ "It [urushiol, the poisonous oil] is produced in the resinous juice of the ducts of the leaves" (Muenscher 1939). All parts potentially poisonous (Foster 1990, Muenscher 1939, Tampion 1977, Turner and Szczawinski 1991). Avoid contact with this plant, you may develop blisters and rashes from contact. Remember: Leaflets three, let it be.

W Although "a noxious weed", some wildlife species reportedly are able to eat the berries (Henderson 1987), including "over sixty species of birds" (Petrides 1986).

BETULACEAE

Alnus incana (L.) Moench—Speckled Alder

—€ Inner and young bark, and buds reported edible (Fernald, Kinsey and Rollins 1958).

R_x Various alders' bark teas reported used by Native Americans for many conditions, including skin rashes, toothaches, labor pain, etc. (Foster 1990). Roots reported used by the Ojibwe in a tea mixed with dried bumblebees as aid during difficult labor (Densmore 1974). The root could also be mixed with the roots of *Cornus alternifolia* L. f. and *Cornus stolonifera* Michx. and used in a tea to treat soreness of the eye (Densmore 1974).

○ ~ • Alders can be used to make various dyes (Bliss 1980, Densmore 1974, Dunsmore 1979).

W Petrides (1986) notes reports of use of the buds by grouse and many herbivorous mammals.

Betula spp.—Birches

○ ~ • Birch leaves reported to yield a faint yellow dye and the bark a light brown dye (Dunsmore 1979).

W Rated "excellent" for wildlife landscaping by the Minnesota DNR as habitats for caterpillars of butterfly species (Henderson 1987).

Betula papyrifera Marsh.—Paper-Birch, Canoe-Birch

—€ It is reported that Native Americans have used the inner bark in flours and as "noodles in stews" (Angier 1974). Its sap can be tapped for syrup (Angier 1974; Fernald, Kinsey and Rollins 1958; Hall 1976).

R_x The inner bark reportedly used by the Ojibwe in a tea for enemas (Densmore 1974).

○ ~ • The inner bark reportedly used by the Ojibwe for dyes (Densmore 1974).

W Rated "fair" by the Minnesota DNR for wildlife landscaping as a food source for wildlife (Henderson 1987). This includes use of the twigs by herbivorous wildlife and the seeds and buds by

grouse (Petrides 1986).

O As the name canoe-birch suggests, the bark has been used to make canoes by Native Americans, Voyageurs, etc. The bark is reported as a good source of tinder, burning even when wet (Hall 1976).
Reportedly used by the Ojibwe for various utensils, housing, art, etc. (Densmore 1974).

Corylus americana Walt.—American Hazelnut.

—€ The nut is reportedly edible and was used by the Ojibwe (Densmore 1974). Reported uses include as fresh nuts, or ground and added to bread and cake (Fernald, Kinsey and Rollins 1958).

R_x Twig hairs reported used to expel worms, bark tea drunk by Native Americans for hives and fevers and used the bark to cover wounds and treat skin conditions (Foster 1990); burnt stalks reported used by the Ojibwe for treating nervous convulsions (Densmore 1974). Also, a tea made from the root of American hazelnut, plus the inner bark of *Prunus virginiana* L. and the root of *Quercus alba* L. and the heartwood of *Ostrya virginiana* (Mill.) K. Koch. reported used by the Ojibwe for lung hemorrhages (Densmore 1974).

◦ ~ • The green bur reportedly used by the Ojibwe for dyes (Densmore 19974).

W Rated "excellent" by the Minnesota DNR for wildlife landscaping, especially due to use of nuts as food source by wildlife (Henderson 1987).

O Reported used by the Ojibwe as source of wood for "drumming sticks" (Densmore 1974).

Ostrya virginiana (Mill.) K. Koch.—American Hop-Hornbeam; Ironwood

R_x The Ojibwe used wood of ironwood mixed with leaves of *Thuja occidentalis* L. (Arbor Vitae) as part of a cough syrup, the heartwood also used in a tea for kidney problems and as part of a treatment for rheumatism (Densmore 1974). See also *Corylus americana* Walt.

□ Wood reported used by the Ojibwe for frames for housing (Densmore 1974).

W Rated "fair" by the Minnesota DNR for wildlife landscaping as a source of cover (Henderson 1987). In his description of ironwood, Petrides (1986) notes its use as food by various game birds, deer, and cottontail rabbits.

CACTACEAE

Opuntia fragilis (Nutt.) Haw.—Little Prickly Pear

—€ The fruit is reported edible raw or in jelly and candy or pickled (Angier 1974, Medsger 1939).

Although agreeing with this, Fernald, Kinsey and Rollins (1958) also report that the cactus stem segments could be roasted and the flesh eaten, and the seeds could be used as a soup thickener.

However, they also note that eastern species are relatively unimportant in these respects.

W Food source for wildlife (Angier 1974). Probably not as important in this aspect in Waite Park, but more important as one goes west.

CAPRIFOLIACEAE

Diervilla lonicera L.—Bush-Honeysuckle

R_x Leaf tea reported used by the Ojibwe for stomach pain (Densmore 1974).

Lonicera spp.—Honeysuckles

R_x A root tea reported used by the Ojibwe for “lung trouble” (Densmore 1974).

W Have a “fair” rating for wildlife landscaping by the Minnesota DNR as sources of nectar for hummingbirds (Henderson 1987).

Lonicera tatarica L.—Smooth or Tartarian Honeysuckle

W Rated “fair” by the Minnesota DNR for wildlife landscaping as a nectar plant for butterflies (Henderson 1987).

Sambucus pubens Michx.—Red-berried Elder

♣ Berries have been reported as poisonous [Note: this refers to livestock] (Muenscher 1939). Elders with red fruits have been reported as inedible for humans (Angier 1974; Fernald, Kinsey and Rollins 1958; Hall 1976) and somewhat toxic (Tampion 1977, Turner and Szczawinski 1991), while the vegetative parts are all toxic and can cause cyanide poisoning (Turner and Szczawinski 1991).

R_x “Elderberry stems and roots are used as an emetic and purgative by a number of North American Indian groups” (Turner and Szczawinski 1991).

W Even though humans can't eat red-berried elder's fruits, it is reported to be used by wildlife (Angier 1974, Medsger 1939). Rated "good" for wildlife landscaping by the Minnesota DNR as source of nectar for butterflies and "excellent" as source of food and cover overall (Henderson 1987).

Viburnum lentago L.—Nannyberry

—€ The fruits are reported edible, but of varying quality (Fernald, Kinsey and Rollins 1958; Medsger 1939).

W Rated "good" by the Minnesota DNR for wildlife landscaping as a source of cover and winter food (Henderson 1987).

V. rafinesquianum Schultes—Downy Arrow-Wood

V. trilobum Marsh.—High-bush Cranberry

—€ The somewhat sharp-flavored berries are edible, can be used in preserves or fresh, and are rich in Vitamin C (Angier 1974; Fernald, Kinsey and Rollins 1958; Hall 1976).

R_x In his description of *V. trilobum*, Petrides (1986) notes that the bark is "reportedly medicinal."

W Rated "excellent" by the Minnesota DNR for wildlife landscaping, particularly as a source of winter food (fruit) (Henderson 1987).

CELASTRACEAE

Celastrus scandens L.—Bittersweet, Climbing Bittersweet

♠ Reported poisonous for humans and livestock (Muenscher 1939, Foster 1990, Turner and Szczawinski 1991).

R_x Various parts used in folk and Native American medicine as remedies for skin problems and wounds, emetic, diuretic (Densmore 1974, Foster 1990).

W Rated "excellent" by the Minnesota DNR for wildlife landscaping, particularly as a winter food source (berries) (Henderson 1987). The plant is reportedly used by many bird species, fox squirrels, and cottontail rabbits (Petrides 1986).

CORNACEAE

Cornus spp.—Dogwoods

W Rated "good" for wildlife landscaping by the Minnesota DNR, particularly as nectar plants for butterflies (Henderson 1987). Also, Petrides (1986) notes that the fruits are eaten by grouse species and pheasants.

Cornus foemina Mill.—Gray, Panicked, or Gray-bark Dogwood

W Rated "excellent" by the Minnesota DNR for wildlife landscaping as a food source for wildlife (Henderson 1987). Petrides (1986) notes that the fruits are reportedly eaten by grouse and pheasants.

C. rugosa Lam.—Round-Leaved Dogwood

W Rated "excellent" by the Minnesota DNR for wildlife landscaping as a food source for wildlife (Henderson 1987). Petrides (1986) notes that the fruits are eaten by grouse, the stems by herbivorous wildlife.

O Reportedly used by the Ojibwe as a tobacco substitute (Densmore 1974).

C. stolonifera Michx.—Red Osier Dogwood

R_x See *Alnus incana* (L.) Moench.

o ~ • Inner bark reportedly used by the Ojibwe for red dyes (Densmore 1974).

W Rated "excellent" by the Minnesota DNR for wildlife landscaping as a food source for wildlife (Henderson 1987). Petrides notes similar use by wildlife as for *C. rugosa* Lam.

O Reportedly used as an additive to tobacco by Native Americans to make it more mild flavored (Densmore 1974, Dunsmore 1979).

ERICACEAE

Vaccinium angustifolium Ait.—Lowbush Blueberry

—€ The berries are edible. Native Americans have used the fruits in many ways, including as a soup-thickener (Angier 1974, Densmore 1974, Medsger 1939). It has also been used by Native Americans over winter in pressed cakes and added to pemmican (Fernald, Kinsey and Rollins 1958; Hall 1976).

R_x Leaf tea used by Native Americans “as a ‘blood purifier’; also used for colic, labor pains, and [after] miscarriage;” (Foster 1990), fumes of burned dry flowers were inhaled for madness (Foster 1990, Densmore 1974).

○ ~ • Berries give blue dyes, other parts give mostly tans with mordants (Bliss 1980).

W Rated “excellent” by the Minnesota DNR for wildlife landscaping as a general source of food (fruits) (Henderson 1987). Petrides (1986) notes the use of the fruits by various woodland game birds.

FAGACEAE

Quercus spp.—Oaks

♠ Tannic acid potentially toxic and carcinogenic (Foster 1990). This is especially concentrated in leaves, young growth and acorns (Turner and Szczawinski 1991).

—€ “Acorns were likely tops on the long list of wild foods relied upon by the Indians” (Angier 1974); and can be used to make flour (Angier 1974; Densmore 1979; Fernald, Kinsey and Rollins 1958; Hall 1976; Medsger 1939). White group oaks (*Q. alba* and *Q. macrocarpa* have low tannin levels and can be eaten directly, but red group oaks *Q. ellipsoidalis* and *Q. rubra* have to have the tannins leached away before being eaten (Angier 1974, Densmore 1979, Hall 1976).

R_x “Some of the Indian tribes used to let their acorn meal accumulate a mold.” This was used as an antibiotic (Angier 1974). “Experimentally, tannic acid has been shown to be antiviral, antiseptic, anticancer and carcinogenic” (Foster 1990).

○ ~ • Galls used to make dyes, due to higher tannin concentrations (Bliss 1980); a brown dye is reportedly made from acorns (Densmore 1979).

□ Reported timber uses of oaks include railroad ties (Red group oaks requiring addition of a preservative, though), firewood, furniture, many housing construction uses, agricultural implements, etc. (Brown and Panshin 1940). Oaks reportedly used by the Ojibwe for awls and other general uses (Densmore 1974).

W All oaks rated "excellent" by the Minnesota DNR for wildlife landscaping both as caterpillar habitat and as food source for wildlife (acorns) (Henderson 1987). Petrides (1986) remarks on the wide use of acorns by a range of species, including wood ducks, pheasants, and squirrels.

Quercus alba L.—White Oak

—E Burnt acorns can be used as a coffee substitute (Dunsmore 1979).

R_x Inner-bark tea has many ethnomedical uses, including for poison-ivy and other rashes, sore throat, etc. (Foster 1990). See also *Corylus americana* Walt. for a description of its use in combination with Hazelnut.

Q. macrocarpa Michx.—Bur-oak

R_x A mixture of the inner bark of this, *Q. rubra* L. and *Populus tremuloides* Michx., plus various parts of *P. balsamifera* L. and the root of *Polygala senga* L., were reportedly used by the Ojibwe as a treatment for heart problems; the inner bark of *Q. macrocarpa* could also be used with blackberry root for lung troubles and a root-tea for stomach cramps (Dunsmore 1974).

o ~ • Inner bark reportedly used by the Ojibwe for dyes (Dunsmore 1974).

Q. rubra L.—Northern Red Oak, Red Oak

R_x See *Q. alba* and *Q. macrocarpa*.

LEGUMINOSAE

Amorpha canescens Pursh—Leadplant

W Has an "excellent" rating for wildlife use, mainly as cover, by the Minnesota DNR (Henderson 1987).

Robinia pseudo-acacia L.—Black Locust

♠ The shoots and other parts are toxic (Foster 1990, Muenscher 1939, Tampion 1977, Turner and Szczawinski 1991).

—E The seeds are reported used by Native Americans as food after cooking or boiling (Medsger 1939), and seeds and the inner bark are noted as an emergency food (Fernald, Kinsey and Rollins 1958). Perhaps cooking destroys toxins, but definitely not recommend as a wild food source.

R_x Root bark used by Native Americans, Chinese medicine and in folk medicine to induce vomiting, and by Native Americans for toothaches . (Foster 1990). Foster also reports a flower tea as used for rheumatism.

□ Reported uses include fence posts, stakes, other outdoor situations due to strength and durability (Brown and Panshin 1940).

W Petrides (1986) notes that the seeds are eaten by various wildlife species.

OLEACEAE

Frazinus spp.—Ashes

—E The winged fruits are reportedly edible, especially when pickled (Fernald, Kinsey and Rollins 1958).

R_x The roots reportedly used by the Ojibwe in a tea as a tonic and for applying enemas (Densmore 1974).

□ Reported uses of woods of ashes similar for all species common in this area. These uses especially include those where strength, especially when bent, is needed. These include such items as baseball bats, furniture, snowshoes, oars, pipes, axe and other tool handles, hockey sticks, etc. However, *F. nigra* is not always as strong as other ashes [reasons not listed, perhaps differences in growth conditions between sites could account for differences in quality] (Brown and Panshin 1940). The wood of ashes reportedly used by the Ojibwe for snowshoes, sleds, and other uses (Densmore 1974).

Frazinus nigra Marsh.—Black Ash

W Rated "excellent" by the Minnesota DNR for wildlife landscaping as food and cover source for wildlife (Henderson 1987).

O The bark of black ash reportedly used by the Ojibwe to cover dwellings (Densmore 1974). Petrides (1986) remarks on the ability to use strips of wood for crafts such as basket-weaving, which gives it a common name of "basket ash."

3

F. pennsylvanica Marsh.—Red Ash, Green Ash

W Rated “excellent” by the Minnesota DNR for wildlife landscaping as source of food and cover for wildlife (Henderson 1987).

Syringa vulgaris L.—Common Lilac

W Rated “good” for wildlife landscaping by the Minnesota DNR as a source of nectar for bees and butterflies, and “fair” as a source of nectar for hummingbirds (Henderson 1987).

RHAMNACEAE

Ceanothus americanus L.—New Jersey Tea, Redroot

—€ The leaves can be used to make a tea (Angier 1974; Dunsmore 1979; Fernald, Kinsey and Rollins 1958; Foster 1990; Hall 1976; Medsger 1939).

R_x Root tea used by Native Americans for various medical problems, including snakebite (Foster 1990), and colds (Dunsmore 1974).

◦ ~ • The roots can be used to make a red dye (Hall 1976, Medsger 1939).

W Rated “fair” by the Minnesota DNR for wildlife landscaping as a hummingbird nectar source; rated “excellent” as a nectar source for butterflies, is listed among the “best butterfly nectar sources in Minnesota” (Henderson 1987).

Rhamnus cathartica L.—Common Buckthorn

♠ “The bark, leaves, and fruit contain purgative substances” (Muenscher 1939). I.e. one will probably stop eating immediately, before eating enough to be harmful (Fernald, Kinsey and Rollins 1958). Otherwise causes gastroenteritis (Tampion 1977).

◦ ~ • The berries reported to yield a dye called “Chinese Green” (Medsger 1939).

W Berries listed as “good for birds” but noted as an invasive exotic by the DNR (Henderson 1987). The fruit is reportedly eaten “by a few birds, including bobwhite and wild turkey” (Petrides 1986).

ROSACEAE

Aronia melanocarpa (Michx.) Ell.—Black Chokeberry

—€ The fruits are edible and reportedly make good jelly (Fernald, Kinsey and Rollins 1958).

W Rated “good” by the Minnesota DNR for wildlife landscaping as a source of cover and winter food (fruit) (Henderson 1987). Reportedly used by grouse species and prairie chickens (Petrides 1986).

Amelanchier spp. Juneberries, Suskatoon

♠ It is reported that twigs and leaves may have toxic levels of cyanide (Turner and Szczawinski 1991).

—€ Fruits reported used by Native Americans as dried cakes for winter and in pemmican, and have since been used in sauces, jellies, pies, wines, etc. (Angier 1974; Fernald, Kinsey, and Rollins 1958; Hall 1976; Medsger 1939).

W They are reportedly eaten by many birds and mammals (Petrides 1986).

Crataegus spp.—Hawthornes

—€ All hawthornes are reported to have edible fruit and can be used in preserves (Angier 1974; Fernald, Kinsey and Rollins 1958; Hall 1976; Jaques 1958; Medsger 1939), and have been used by Native Americans either fresh or as dry rations (Angier 1974, Densmore 1974).

R_x Roots used by the Ojibwe in tea to treat “pain in [the] back and female weakness” (Densmore 1974).

W Rated “good” for wildlife landscaping by the Minnesota DNR, particularly as a nectar source for bees (Henderson 1987). Petrides (1986) also mentions its use for honey and also as a food source in winter by many animals.

O Thorns can be used as awls and fishhooks (Densmore 1974, Hall 1976).

Prunus spp.

♠ *Prunus serotina* and *P. virginiana* produce poisonous hydrocyanic acid in the leaves, stems and

the pits (Angier 1974, Muenscher 1939, Tampion 1977, Turner and Szczawinski 1991). So care should be taken when eating fruits. Hydrocyanic acid is reported destroyed by cooking (Hall 1976), and it is reported that the Ojibwe used the twigs of various species for hot teas (Densmore 1974), but one should still be careful.

W Rated "excellent" for wildlife landscaping by the Minnesota DNR as sources of nectar for butterflies (Henderson 1987).

Prunus americana Marsh.—Wild Plum

♣ Not reported poisonous in any part by some (Medsker 1939), but the stones reported poisonous by others (Turner and Szczawinski 1991)

—€ The fruit is reported edible fresh, in preserves, pies, and jams, (Angier 1974; Fernald, Kinsey and Rollins 1958) and as a liquor flavorer (Hall 1976) and mellow of gin (Angier 1974).

R_x Root tea reported used by the Ojibwe for worms, and the bark used in a tea as a disinfectant (Densmore 1974).

○↪• Inner bark reported used by the Ojibwe for dyes (Densmore 1974).

W Rated "excellent" by the Minnesota DNR for wildlife landscaping for its food and cover value (Henderson 1987).

P. serotina Ehrh.—Black Cherry, Rum Cherry

—€ Reported good for jellies, in liquors, pies, sherberts, etc. (Angier 1974; Fernald, Kinsey and Rollins 1958; Hall 1976).

R_x Used in cough drops. "The inner bark is traditionally used... for sore throats and other ailments" (Foster 1990), including use by the Ojibwe for cuts and wounds and as a disinfectant (Densmore 1974). Roots reported used in a tea by the Ojibwe as treatment for worms, "Cholera infantum", or mixed with *Ledum groenlandicum* Oeder (Labrador Tea) or alone in poultices for skin wounds and conditions (Densmore 1974).

□ Noted as a very valuable source of timber (Angier 1974, Brown and Panshin 1940, Hall 1976, Medsker 1939, Petrides 1986). Reported uses include fence posts, cabinetwork, firewood, and furniture (Brown and Panshin 1940). I also heard from a park ranger once that it is a very useful wood for carving.

W Rated "excellent" by the Minnesota DNR for wildlife landscaping as a food source for wildlife (Henderson 1987).

P. virginiana L.—Choke-Cherry

—E Fruits edible, eaten raw, in jellies and in wine (Angier 1974, Medsger 1939). Reportedly used by the Ojibwe as dry winter rations (Densmore 1974) and by various northern Native American tribes in pemmican (Fernald, Kinsey and Rollins 1958).

R_x Inner bark used by the Ojibwe in tea, gargled for sore throat, and drunk for stomach cramps; also used as a poultice to treat cuts, wounds, and sores (Densmore 1974). See also *Corylus americana* Walt.

W Rated "excellent" by the Minnesota DNR for wildlife landscaping as source of food and cover for wildlife (Henderson 1987).

O Bark tea used as a hair rinse by the Ojibwe (Densmore 1974).

Rosa spp.—Roses

—E All rose parts are edible. (Angier 1974; Fernald, Kinsey and Rollins 1958). It is reported long-used by Native Americans on this continent (Angier 1974). It is a very high source of Vitamin C, in teas, preserves, salads, etc (Angier 1974, Hall 1976). Teas can be made from hips, flowers, roots and leaves (Dunsmore 1979).

o ~ • Hips, twigs, leaves, flowers used for dyes (Bliss 1980).

R_x The inner bark of roses mixed with that of *Rubus strigosus* Michx. reportedly used by the Ojibwe as drops for treating cataracts (Densmore 1974).

W Important food source for wildlife, large stands can act as cover (Angier 1974). Rated "good" for wildlife landscaping by the Minnesota DNR, particularly as nectar plants for butterflies (Henderson 1987).

Rosa arkansana Porter—Prairie Wild Rose

R_x Roots used by the Ojibwe with several other, herbaceous, plants in a tea to stop bleeding from wounds, and also used as part of a tonic (Densmore 1974).

R. blanda Ait.—Smooth Wild Rose

W Rated "good" by the Minnesota DNR for wildlife landscaping as a source of winter food (Henderson 1987).

Rubus spp.

—€ Used in wines, jellies, jams, pies, fresh, etc. (Fernald, Kinsey and Rollins 1958; Hall 1976; Medsger 1939), and reported used fresh or dried for winter use by the Ojibwe (Densmore 1974).

R. Leaf and root teas a reported folk remedy for various stomach conditions and as a childbirth aid (Foster 1990).

W Rated "excellent" for wildlife landscaping by the Minnesota DNR as sources of nectar for butterflies (Henderson 1987). Petrides (1986) notes that it is reported "eaten by over one hundred and fifty birds and mammals."

Rubus strigosus Michx.—American Red Raspberry

—€ "The most valuable wild fruit on this continent in terms of money and of importance as a summer wildlife food", it is reported high in Vitamin C and the twigs are also edible (Angier 1974).

R. Root tea used by the Ojibwe to treat dysentery (Densmore 1974). See also *Rosa sp.*

W Raspberries are rated "good" for wildlife landscaping by the Minnesota DNR as nectar sources for butterflies, and "excellent" as sources of food and cover (Henderson 1987).

Spiraea alba Du Roi—Meadowsweet

R. Leaf and flower teas of this and other *Spiraeas* reportedly used by Native Americans for digestive illnesses and morning sickness (Foster 1990).

W Rated "excellent" for wildlife by the Minnesota DNR, particularly as a nectar source for butterflies (Henderson 1987). Petrides (1986) notes the use of the buds by grouse species, and of the twigs by deer and rabbits.

RUTACEAE

Zanthoxylum americanum Mill.—Prickly-ash

R_x “Bark tea... historically used by Native Americans and herbalists for chronic rheumatism, dyspepsia, dysentery, kidney trouble, heart trouble... lung ailments... Bark chewed for toothaches. Berry tea used for sore throats, tonsillitis, also used as a diuretic” (Foster 1990); root tea also reported used by the Ojibwe for sore throats (Densmore 1974). Petrides (1986) notes that in some areas it is called “Tooth-ache Tree” because of that use of the bark.

SALICACEAE

Populus spp.

—€ The inner bark of poplars is reported edible (Angier 1974), and has been reported to be usable as an emergency food (Fernald, Kinsey, and Rollins 1958).

R_x The outer bark is a source of salicin (Angier 1974, Foster 1990). It should be noted that salicin is a component of today’s aspirin.

□ Various species reported used as source of pulp for paper manufacture, plywood veneers, boxes, and for musical instrument construction (Brown and Panshin 1940).

W Have an “excellent” rating for wildlife by the Minnesota DNR, particularly for caterpillars of various butterfly species (Henderson 1987).

Populus balsamifera L.—Balsam Poplar

R_x Buds reported source of pain-easing resin, other parts used in teas for pain relief, probably due to presence of salicin (Foster 1990, Densmore 1974). Roots mixed with *Cirsium sp* (thistle) roots and used by the Ojibwe in a tea to treat “back pain and female weakness”, and the roots also could be mixed with *P. tremuloides* Michx. roots in a tea to prevent miscarriages (Densmore 1974). See also *Quercus macrocarpa* Michx.

P. deltoides Marsh.—Cottonwood

4x

R_x "Inner bark tea used for scurvy, and as a female tonic" (Foster 1990).

○ ~ • Cottonwoods provide various shades of dyes (Bliss 1980).

W Rated "fair" by the Minnesota DNR for wildlife landscaping as a source of cover (Henderson 1987).

O Cottonwoods important in Plains Native American ceremonies (Foster 1990).

P. grandidentata Michx.—Big-toothed or Large-toothed Aspen

W Rated "fair" by the Minnesota DNR for wildlife landscaping, as a source of winter food and cover (Henderson 1987).

P. tremuloides Michx.—Trembling Aspen, Quaking Aspen

—€ The sap has been reported tapped by the Ojibwe for its syrup (Densmore 1974).

R_x Root-bark tea reported used by Native Americans to stop bleeding; inner-bark tea for stomach pain, colds and fevers, worms, venereal disease; leaf buds used for colds and cough suppressant. "Bark tincture a folk remedy used for fevers, rheumatism, arthritis" and other uses as listed above (Foster 1990). Bark tea also used by the Ojibwe to treat cuts (Densmore 1974). See also *Quercus macrocarpa* Michx. and *P. balsamifera* Michx.

○ ~ • Various colors with mordants, including a "screaming gold" when prepared with tin (Bliss 1980).

Salix spp.

—€ Like the poplars, the inner bark is edible (Angier 1974), and has been reported to be useful as an emergency food (Fernald, Kinsey and Rollins 1958).

R_x The outer bark is a source of salicin (Angier 1974), and the inner bark has been used for treating indigestion by the Ojibwe (Densmore 1974).

W Petrides (1986) notes the use of the buds, leaves, and twigs of willows by browsing wildlife.

O Used as a tobacco substitute by the Ojibwe (Densmore 1974).

Salix candida Flügge—Sage-leaved Willow, Hoary Willow

○ ~ • Variations of yellows to gold with mordants (Bliss 1980)

Salix discolor Muhl.—Pussy-Willow

W Has an “excellent” rating for wildlife by the Minnesota DNR, particularly as a nectar source for bees and butterflies (Henderson 1987).

S. exigua Nutt.—Sand-bar Willow

W Rated “good” by the Minnesota DNR for willife landscaping as a source of cover for wildlife (Henderson 1987).

S. gracilis Anderss.—Slender Willow

S. humilis Marsh.—Upland Willow, Prarie Willow

W Rated “excellent” for wildlife by the Minnesota DNR, particularly as source of nectar for bees and as habitat for butterfly caterpillars (Henderson 1987).

SAXIFRAGACEAE

Ribes spp.

—€ All edible, some are good raw. It is reported that many are better cooked, and that they were used Native Americans to make pemmican. (Angier 1974, Densmore 1974, Hall 1976, Medsger 1939).

Currants can be used to make wine (Hall 1976) and sauces (Fernald, Kinsey and Rollins 1958).

R. Various parts of the various *Ribes* species used by the Ojibwe as a diuretic, to treat “pain in [the] back and female weakness” (Densmore 1974).

W Rated “good” by the Minnesota DNR for wildlife landscaping as nectar sources for butterflies, and “good” as general sources of food for wildlife, with *R. cynobasti* also serving as a source of cover (Henderson 1987).

Ribes americanum Mill.—Wild Black Currant, Black currant

R_x Root bark reportedly used in a tea by Native Americans for worms and kidney problems, and in poultices for swelling (Foster 1990).

◦ ~ • Different colored fruits used for dyes, other parts of plants used as well (Bliss 1980).

TILIACEAE

Tilia americana L.—Basswood, American Linden

♠ “Frequent consumption of flower tea may cause heart damage” (Foster 1990).

—€ A tea can be made from the flowers (Dunsmore 1979), but see warning above; also, the sap may be tapped for syrup (Dunsmore 1974, Dunsmore 1979). Fernald, Kinsey and Rollins (1958) report that the fruits and flowers could be ground together to make a chocolate substitute, and that the bast can be used as an emergency food.

R_x “American Indians used inner-bark tea for lung ailments, heart-burn, weak stomach; bark poultice to draw out boils.” Tea from other parts used for headaches and poor digestion (Foster 1990).

□ Reported uses include plywood, veneer, coffins, cabinetry, and even piano keys and Venetian-blinds (Brown and Panshin 1940).

W Rated “fair” by the Minnesota DNR for wildlife landscaping, mainly as a source of cover (Henderson 1987). Petrides’s (1986) description includes the use of the buds, fruits, and twigs by many wildlife species, and that *T. americana* is an important honey-plant.

◊ Used as a source of fiber by the Menomini (also spelled Menominee) (Dunsmore 1979) and the Ojibwe (Dunsmore 1974). Petrides (1986) notes that the inner bark is a good source of cords.

ULMACEAE

Celtis occidentalis L.—Hackberry, Sugarberry

—€ It is reported that hackberries were a favored food of Native Americans, that they get sweeter in cold weather, and that seed kernels are also edible and are sweet and similar to dates in flavor” (Angier 1974, Fernald, Kinsey and Rollins 1958).

□ Reported uses similar to *Ulmus americana* and *U. rubra*, as well as *Frazinus americana* (Brown

and Panshin 1940).

W Rated "good" for wildlife by the Minnesota DNR, particularly as a source of nectar for moths (Henderson 1987). Petrides (1986) also notes the use of the fruit by many bird species.

Ulmus americana L.—American Elm, White Elm

□ Reportedly used for boxes, crates, furniture, trims, other situations where bendable wood needed (Brown and Panshin 1940).

W Petrides (1986) notes that the seeds are eaten by various game birds and mammals.

U. pumila L.—Siberian, Chinese or Oriental Elm

U. rubra Muhl.—Red Elm, Slippery Elm

—∈ Inner bark used for tea, also used by Native Americans boiled with buffalo tallow (Angier 1974, Medsger 1939).

R_x A paste of powdered inner bark reported used as a poultice; a bark tea used for coughs due to colds (Angier 1974, Densmore 1974, Foster 1990), and digestive problems (Foster 1990).

□ Uses similar to *Ulmus americana* (Brown and Panshin 1940).

W Petrides (1986) notes the use of the twigs as food by deer and rabbits.

O Useful ornamental (Angier 1974); used for "general utilities" by the Ojibwe (Densmore 1974).

VITACEAE

Parthenocissus inserta (Kerner) Fritsch —Virginia Creeper, Woodbine

♠ Leaves and berries toxic (Foster 1990, Tampion 1977, Turner and Szczawinski 1991).

R_x Teas from various parts reported used by Native Americans for various illnesses, from rashes to jaundice (Foster 1990).

Vitis riparia Michx.—Frost Grape, River-Bank Grape

♠ The roots are reported poisonous (Angier 1974).

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—€ The berries are used in jellies, juice, wine-making, and eaten fresh or as raisins (Angier 1974; Dunsmore 1979; Fernald, Kinsey and Rollins 1958; Hall 1976; Medsger 1939). The leaves are edible, often wrapped around meatstuffs (Hall 1976). They have been cultivated by Native Americans (Angier 1974). Also, the sap can be tapped and drunk, but doing so kills the vine (Angier 1974).
W Rated "excellent" by the Minnesota DNR for wildlife landscaping as a source of food (Henderson 1987). Petrides (1986) notes "Almost one hundred species of singbirds... reported eating grapes", other wildlife using them as well.

Table 4: ♣, Plants with Dangerous Properties
Ordered As Found in the Text

Scientific Name	Common Name(s)	Part(s) of Concern
CUPRESSACEAE <i>Juniperus virginiana</i> L.	Eastern Red Cedar	All, esp. berries
ANACARDIACEAE <i>Rhus radicans</i> L.	Poison Ivy	All parts, due to Urushiol oils
CAPRIFOLIACEAE <i>Sambucus pubens</i> Michx.	Red-Berried Elder	All parts, esp. vegetative
CELASTRACEAE <i>Celastrus scandens</i> L.	Bittersweet, Climbing Bittersweet	All, esp. berries
FAGACEAE <i>Quercus</i> sp.	Various Oaks	Tannins from veg. parts, and in acorns of red group oaks
LEGUMINOSAE <i>Robinia pseudo-acacia</i> L.	Black Locust	All, esp. vegetative
RHAMNACEAE <i>Rhamnus catharticus</i> L.	Common Buckthorn	All, esp. fruit
ROSACEAE <i>Amelanchier</i> sp. <i>Prunus</i> sp.	Juneberries, Saskatoon Cherries, Plums, etc.	Twigs and Leaves Twigs, Bark, Leaves, Pits
TILIACEAE <i>Tilia americana</i> L.	Basswood, American Linden	Flowers (Tea)
VITACEAE <i>Parthenocissus inserta</i> (Kerner) Fritsch <i>Vitis riparia</i> Michx.	Virginia creeper, Woodbine Frost or River-Bank Grape	Leaves and Berries Roots

Table 5: —€, Plants Used as Food
As Ordered in the Text

Scientific Name	Common Name(s)	Part(s) Used
CUPRESSACEAE <i>Juniperus virginiana</i> L.	Eastern Red Cedar	Berries
PINACEAE <i>Pinus resinosa</i> Ait.	Red Pine, Norway Pine	Bark, Needles, Cones
ACERACEAE <i>Acer</i> sp.	Maples, Box Elder	Sap, Seeds, Bark and Leaves of Maples
ANACARDIACEAE <i>Rhus glabra</i> L.	Smooth Sumac	Berries
BETULACEAE <i>Alnus incana</i> (L.) Moench <i>Betula papyrifera</i> Marsh. <i>Corylus americana</i> Walt.	Speckled Alder Paper or Canoe-Birch American Hazelnut	Inner and Young Bark, Buds Sap, Inner Bark Nuts
CACTACEAE <i>Opuntia fragilis</i> (Nutt.) Haw.	Little Prickly Pear	Fruit
CAPRIFOLIACEAE <i>Viburnum lentago</i> L. <i>Viburnum trilobum</i> Marsh.	Nannyberry High-Bush Cranberry	Fruit Fruit
ERICACEAE <i>Vaccinium angustifolium</i> Ait.	Lowbush Blueberry	Fruit
FAGACEAE <i>Quercus</i> sp.	Oaks	Acorns, but Red and Northern Northern Pin Only After Leaching
OLEACEAE <i>Fraxinus</i> sp.	Ashes	Winged Seeds
RHAMNACEAE <i>Ceanothus americanus</i> L.	New Jersey Tea, Redroot	Leaves (Tea)
		CONTINUED

Table 5, Continued: -E, Plants Used as Food
As Ordered in the Text

Scientific Name	Common Name(s)	Part(s) Used
ROSACEAE		
<i>Amelanchier sp.</i>	Juneberries, Suskatoon	Fruit
<i>Aronia melanocarpa</i> (Michx). Mill.	Black Choke-Berry	Fruit
<i>Crataegus sp.</i>	Hawthorns	Fruit
<i>Prunus americana</i> Marsh.	Wild Plum	Fruit
<i>P. serotina</i> Ehrh.	Black or Rum Cherry	Fruit
<i>P. virginiana</i> L.	Choke-Cherry	Fruit
<i>Rosa sp.</i>	Roses	All Parts, esp. Hips (Fruit)
<i>Rubus sp.</i>	Blackberries, Dewberries, Raspberries	Fruit
SALICACEAE		
<i>Populus sp.</i>	Aspens, Cottonwood, Poplars	Inner Bark, Bast
<i>Salix sp.</i>	Willows	Inner Bark, Bast
SAXIFRAGACEAE		
<i>Ribes sp.</i>	Currants, Gooseberries	Fruit
TILIACEAE		
<i>Tilia americana</i> L.	Basswood, American Linden	Fruits, Flowers, Sap
ULMACEAE		
<i>Celtis occidentalis</i> L.	Hackberry, Sugarberry	Fruit, Seeds
<i>Ulmus rubra</i> Muhl.	Red or Slippery Elm	Inner Bark
VITACEAE		
<i>Vitis riparia</i> Michx.	Frost or River-Bank Grape	Fruit, Leaves, Sap

Table 6: R_x , Plants of Traditional Medicinal Value
As Ordered in the Text

Scientific Name	Common Name(s)	Part(s) Used
CUPRESSACEAE <i>Juniperus virginiana</i> L.	Eastern Red Cedar	Berries, Leaves
ACERACEAE <i>Acer negundo</i> L. <i>A. saccharum</i> Marsh.	Box-Elder Sugar Maple	Inner Bark Inner Bark, Syrup
ANACARDIACEAE <i>Rhus glabra</i> L.	Smooth Sumac	Berries, Leaves, Flowers
BETULACEAE <i>Alnus incana</i> (L.) Moench <i>Betula papyrifera</i> Marsh. <i>Corylus americana</i> Walt. <i>Ostrya virginiana</i> (Mill.) K. Koch.	Speckled Alder Canoe-Birch, Paper-Birch American Hazelnut Ironwood, American Hornbeam	Bark, Roots Inner Bark Twig Hairs, Stalks, Roots Wood, Heartwood
CAPRIFOLIACEAE <i>Diervilla lonicera</i> L. <i>Lonicera</i> sp. <i>Sambucus pubens</i> Michx.	Bush-Honeysuckle Honeysuckles Red-Berried Elder	Leaves Root Stems, Roots
CELASTRACEAE <i>Celastrus scandens</i> L.	Bittersweet, Climbing Bittersweet	Various
CORNACEAE <i>Cornus stolonifera</i> Michx.	Red-Osier Dogwood	Roots
ERICACEAE <i>Vaccinium angustifolium</i> Ait.	Lowbush Blueberry	Leaves, Flowers
		CONTINUED

Table 6, Continued: *R_x*, Plants of Traditional Medicinal Value

Scientific Name	Common Name(s)	Part(s) Used
FAGACEAE		
<i>Quercus sp.</i>	Oaks	Molds
<i>Q. alba</i> L.	White Oak	Inner Bark
<i>Q. macrocarpa</i> Michx.	Bur-Oak	Inner Bark
<i>Q. rubra</i> L.	Northern Red Oak	Inner Bark
LEGUMINOSAE		
<i>Robinia pseudo-acacia</i> L.	Black Locust	Root Bark, Flowers
OLEACEAE		
<i>Fraxinus sp.</i>	Ashes	Roots
RHAMNACEAE		
<i>Ceanothus americana</i> L.	New Jersey Tea, Bloodroot	Roots
ROSACEAE		
<i>Crataegus sp.</i>	Hawthorns	Roots
<i>Prunus americana</i> March.	Wild Plum	Roots, Bark
<i>P. serotina</i> Ehrh.	Black Cherry, Rum Cherry	Inner Bark, Roots
<i>P. virginiana</i> L.	Choke-Cherry	Inner Bark
<i>Rosa sp.</i>	Roses	Inner Bark
<i>R. arkansana</i> Porter	Prairie Wild Rose	Roots
<i>Rubus sp.</i>	Blackberries, Dewberries, Raspberries	Leaves, Roots
<i>R. strigosus</i> Michx.	American Red Raspberry	Roots, Inner Bark
<i>Spiraea alba</i> Du Roi	Meadowsweet	Leaves, Flowers
RUTACEAE		
<i>Zanthoxylum americanum</i> Mill.	Prickly-Ash	Bark, Berries, Roots
CONTINUED		

Table 6, Continued: R_x , Plants of Traditional Medicinal Value

Scientific Name	Common Name(s)	Part(s) Used
SALICACEAE		
<i>Populus sp.</i>	Aspens, Poplars, Cottonwoods	Outer Bark
<i>P. balsamifera</i> L.	Balsam Poplar	Buds, Roots, Various
<i>P. deltoides</i> Marsh.	Cottonwood	Outer and Inner Bark
<i>P. tremuloides</i> Michx.	Trembling, Quaking Aspen	Outer and Inner Bark, Roots
<i>Salix sp.</i>	Willows	Outer and Inner Bark
SAXIFRAGACEAE		
<i>Ribes sp.</i>	Gooseberries, Currants	Various
<i>R. americanum</i> Mill.	Black Currant	Root Bark
TILIACEAE		
<i>Tilia americana</i> L.	Basswood, American Linden	Bark, Inner Bark, Various
ULMACEAE		
<i>Ulmus rubra</i> Muhl.	Red Elm, Slippery Elm	Inner Bark
VITACEAE		
<i>Parthenocissus inserta</i> (Kerner) Fritsch	Woodbine, Virginia Creeper	Various

Table 7: ◦ ~ •, Plants Used for Dyeing
As Ordered in the Text

Scientific Name	Common Name(s)	Part(s) Used
CUPRESSACEAE <i>Juniperus virginiana</i> L.	Eastern Red Cedar	Inner Bark
ACERACEAE <i>Acer</i> sp.	Box-Elder, Maples	Bark, Rotted Wood
ANACARDIACEAE <i>Rhus glabra</i> L.	Smooth Sumac	Berries, Inner Bark
BETULACEAE <i>Alnus incana</i> (L.) Moench <i>Betula</i> sp. <i>B. papyrifera</i> Marsh. <i>Corylus americana</i> Walt.	Speckled Alder Birches Paper-Birch, Canoe-Birch American Hazelnut	Bark, Twigs Leaves Inner Bark, Leaves Bur
CORNACEAE <i>Cornus stolonifera</i> Michx.	Red-Osier Dogwood	Inner Bark
ERICACEAE <i>Vaccinium angustifolium</i> Ait.	Lowbush Blueberry	Berries, Various
FAGACEAE <i>Quercus</i> sp. <i>Q. macrocarpa</i> Michx.	Oaks Bur-Oak	Galls, Acorns Inner Bark
RHAMNACEAE <i>Ceanothus americanus</i> L. <i>Rhamnus cathartica</i> L.	New Jersey Tea, Bloodroot Common Buckthorn	Roots Fruit
ROSACEAE <i>Prunus americana</i> Marsh. <i>Rosa</i> sp.	Wild Plum Roses	Inner Bark Various
SALICACEAE <i>Populus deltoides</i> Marsh. <i>P. tremuloides</i> Michx. <i>Salix</i> sp. <i>Salix candida</i> Flügge	Cottonwood Trembling Aspen, Quaking Aspen Willows Sage-Leaved Willow Hoary Willow	Leaves, Twigs Leaves, Twigs Leaves, Twigs Leaves, Twigs
SAXIFRAGACEAE <i>Ribes americanum</i> Mill.	Black Currant	Fruits, Various

Table 8: □, Plants Noted for Useful
Timber (ex. Construction)
As Ordered in the Text

Scientific Name	Common Name(s)
CUPRESSACEAE <i>Juniperus virginiana</i> L.	Eastern Red Cedar
PINACEAE <i>Pinus resinosa</i> Ait.	Red Pine
ACERACEAE <i>Acer negundo</i> L. <i>A. rubrum</i> L. <i>A. saccharum</i> March.	Box-Elder Red Maple Sugar Maple, Hard Maple
ANACARDIACEAE <i>Rhus glabra</i> L.	Smooth Sumac
BETULACEAE <i>Ostrya virginiana</i> (Mill.) K. Koch	Ironwood, American Hop-Hornbeam
FAGACEAE <i>Quercus</i> sp.	Oaks
LEGUMINOSAE <i>Robinia pseudo-acacia</i> L.	Black Locust
OLEACEAE <i>Fraxinus</i> sp.	Ashes
ROSACEAE <i>Prunus serotina</i> Ehrh.	Black Cherry, Rum Cherry
SALICACEAE <i>Populus</i> sp.	Poplars, Aspens, Cottonwoods
TILIACEAE <i>Tilia americana</i> L.	Basswood, American Linden
ULMACEAE <i>Celtis occidentalis</i> L. <i>Ulmus americana</i> L. <i>U. rubra</i> Muhl.	Hackberry, Sugarberry American Elm, White Elm Red Elm, Slippery Elm

Table 9: W, Plants of Noted Usefulness to
Wildlife and Wildlife Conservation
As Ordered in the Text

Scientific Name	Common Name(s)	Use(s)
CUPRESSACEAE <i>Juniperus virginiana</i> L.	Eastern Red Cedar	Food, Cover, Nesting
PINACEAE <i>Pinus resinosa</i> Ait.	Red Pine	Food, Cover
ACERACEAE <i>Acer negundo</i> L.	Box-Elder	Caterpillar Habitat, Cover
<i>A. rubrum</i> L.	Red Maple	Cover
<i>A. saccharum</i> Marsh.	Hard Maple, Sugar Maple	Cover
ANACARDIACEAE <i>Rhus glabra</i> L.	Smooth Sumac	Winter Food
<i>R. radicans</i> L.	Poison Ivy	Food
BETULACEAE <i>Alnus incana</i> (L.) Moench	Speckled Alder	Food
<i>Betula sp.</i>	Birches	Caterpillar Habitat
<i>B. papyrifera</i> Marsh.	Paper-Birch, Canoe-Birch	Food
<i>Corylus americana</i> Walt.	American Hazelnut	Food
<i>Ostrya virginiana</i> (Mill.) K. Koch.	Ironwood, American Hop-Hornbeam	Cover, Food
CACTACEAE <i>Opuntia fragilis</i> (Nutt.) Haw.	Little Prickly Pear Cactus	Food
CAPRIFOLIACEAE <i>Lonicera sp.</i>	Honeysuckles	Nectar (Hummingbirds)
<i>L. tatarica</i> L.	Tartarian or Smooth Honeysuckle	Nectar (Butterflies)
<i>Sambucus pubens</i> Michx.	Red-Berried Elder	Food, Nectar (Butterflies)
<i>Viburnum lentago</i> L.	Nannyberry	Cover, Food
<i>V. trilobum</i> Marsh.	High-Bush Cranberry	Winter Food
		CONTINUED

Table 9, Continued: W, Plants of Noted Usefulness to
Wildlife and Wildlife Conservation
As Ordered in the Text

Scientific Name	Common Name(s)	Use(s)
CELASTRACEAE <i>Celastrus scandens</i> L.	Bittersweet, Climbing Bittersweet	Winter Food
CORNACEAE <i>Cornus</i> sp. <i>C. foemina</i> Mill.	Dogwoods Gray, Panicked, Gray-Bark Dogwood	Nectar (Butterflies) Food
<i>C. rugosa</i> Lam. <i>C. stolonifera</i> Michx.	Round-Leaved Dogwood Red-Osier Dogwood	Food Food
ERICACEAE <i>Vaccinium angustifolium</i> Ait.	Lowbush Blueberry	Food
FAGACEAE <i>Quercus</i> sp.	Oaks	Caterpillar Habitat, Food
LEGUMINOSAE <i>Amorpha canescens</i> Pursh. <i>Robinia pseudo-acacia</i> L.	Leadplant Black Locust	Cover Food
OLEACEAE <i>Frazinus nigra</i> Marsh. <i>F. pennsylvanica</i> Marsh. <i>Syringa vulgaris</i> L.	Black Ash Green or Red Ash Common Lilac	Food, Cover Food, Cover Nectar (Bees, Butterflies, Hummingbirds)
RHAMNACEAE <i>Ceanothus americanus</i> L. <i>Rhamnus cathartica</i> L.	New Jersey Tea, Redroot Common Buckthorn	Nectar (Butterflies, Hummingbirds), Food Food
ROSACEAE <i>Aronia melanocarpa</i> (Michx.) Ell. <i>Amelanchier</i> sp. <i>Crataegus</i> sp. <i>Prunus</i> sp. <i>P. serotina</i> Ehrh. <i>P. virginiana</i> L.	Black Choke-Berry Juneberries, Suskatoon Hawthorns Plums, Cherries, Etc. Black Cherry, Rum cherry Choke-Cherry	Food, Cover Food Winter Food, Nectar (Bees) Nectar (Butterflies) Food Food, Cover
		CONTINUED

Table 9, Continued: W, Plants of Noted Usefulness to
Wildlife and Wildlife Conservation
As Ordered in the Text

Scientific Name	Common Name(s)	Use(s)
ROSACEAE (Cont.)		
<i>Rosa sp.</i>	Roses	Food, Cover Nectar (Butterflies)
<i>R. blanda</i> Ait.	Smooth Wild Rose	Winter Food
<i>Rubus sp.</i>	Blackberries, Dewberries, Raspberries	Food, Nectar (Butterflies)
<i>R. strigosus</i> Michx.	American Red Raspberry	Food, Cover, Nectar (Butterflies)
<i>Spiraea alba</i> Du Roi	Meadowsweet	Nectar (Butterflies), Food
SALICACEAE		
<i>Populus sp.</i>	Poplars, Aspens, Cottonwoods	Food, Caterpillar Habitat
<i>P. deltoides</i>	Trembling Aspen, Quaking Aspen	Food, Cover
<i>P. grandidentata</i> Michx.	Big-Toothed, or Large-Toothed Aspen	Food, Cover
<i>Salix sp.</i>	Willows	Food
<i>S. discolor</i> Muhl.	Pussy-Willow	Nectar (Bees, Butterflies)
<i>S. exigua</i> Nutt.	Sand-Bar Willow	Cover
<i>S. humilis</i> Marsh.	Upland Willow, Prairie Willow	Caterpillar Habitat, Nectar (Bees)
SAXIFRAGACEAE		
<i>Ribes sp.</i>	Gooseberries, Currants	Food, Nectar (Butterflies)
TILIACEAE		
<i>Tilia americana</i> L.	Basswood, American Linden	Food, Cover
ULMACEAE		
<i>Celtis occidentalis</i> L.	Hackberry, Sugarberry	Food, Nectar (Moths)
<i>Ulmus sp.</i>	Elms	Food
<i>U. americana</i> L.	American or White Elm	Food
<i>U. rubra</i> Muhl.	Red Elm, Slippery Elm	Food
VITACEAE		
<i>Vitis riparia</i> Michx.	Frost Grape, River-Bank Grape	Food

Appendix 1: List of Plant Identifications With Voucher
 Specimen Numbers, On File at St. John's University
 And College of St. Benedict Herbarium (CSB).
 Note: All Numbers Prefaced by DDA-

TAXON	SPECIMEN NUM.
GYMNOSPERMS	
CUPRESSACEAE <i>Juniperus virginiana</i> L.	A17, D25, D29, H15, G6, I41
PINACEAE <i>Pinus resinosa</i> Ait.	I3
ANGIOSPERMS	
ACERACEAE <i>Acer negundo</i> L. <i>A. rubrum</i> L. <i>A. saccharum</i> Marsh.	I31, J4 F30, I40, J74, J81 J14
ANACARDIACEAE <i>Rhus glabra</i> L. <i>Rhus radicans</i> L.	J7, J36 Not Collected
BETULACEAE <i>Alnus incana</i> (L.) Moench <i>Betula papyrifera</i> Marsh. <i>Corylus americana</i> Walt.	F41, G12, H8, H9 J68 G16
CACTACEAE <i>Opuntia fragilis</i> (Nutt.) Haw.	F37
CAPRIFOLIACEAE <i>Diervilla lonicera</i> L. <i>Lonicera tatarica</i> L. <i>Sambucus pubens</i> Michx. <i>Viburnum lentago</i> L. <i>V. rafinesquianum</i> Schultes <i>V. trilobum</i> Marsh.	D4, D15, F18 D26, F44, I17, I19, J50, J51 F19 A2, A19, H10, J70 D5, D6, F10, F35, J69, J73 F28
	CONTINUED

Appendix 1, Cont.: List of Plant Identifications With Voucher
 Specimen Numbers, On File at St. John's University
 And College of St. Benedict Herbarium (CSB).
 Note: All Numbers Prefaced by DDA-

TAXON	SPECIMEN NUM.
CELASTRACEAE	
<i>Celastrus scandens</i> L.	D31
CORNACEAE	
<i>Cornus foemina</i> Mill.	D10, D23, F4, F13, J23, J25, J41
<i>C. rugosa</i> Lam.	D2, D17, F15
<i>C. stolonifera</i> Michx.	A25, I45
ERICACEAE	
<i>Vaccinium angustifolium</i> Ait.	F45
FAGACEAE	
<i>Quercus alba</i> L.	A16, F46
<i>Q. ellipsoidalis</i> E.J. Hill	F24, G1, I44, J1, J55
<i>Q. macrocarpa</i> Michx.	F23, I42, J3, J47
<i>Q. rubra</i> L.	J39, J72
LEGUMINOSAE	
<i>Amorpha canescens</i> Pursh	D12, F22, J75
<i>Robinia pseudo-acacia</i> L.	D1, D7, D8
OLEACEAE	
<i>Fraxinus nigra</i> Marsh.	J71
<i>F. pennsylvanica</i> Marsh.	A22
<i>Syringa vulgaris</i> L.	J56
RHAMNACEAE	
<i>Ceanothus americanus</i> L.	D9, D24, F26, I10
<i>Rhamnus cathartica</i> L.	A5, A15, A18, D20, I8, I24, J11, J26, J32
ROSACEAE	
<i>Crataegus</i> sp.	G13, I39, J48, J62
<i>Prunus americana</i> Marsh.	I7
<i>P. serotina</i> Ehrh.	D32, F14, G7, H5, I34, J34, J38
<i>P. virginiana</i> L.	F21
	CONTINUED

Appendix 1, Cont.: List of Plant Identifications With Voucher
Specimen Numbers, On File at St. John's University
And College of St. Benedict Herbarium (CSB).

Note: All Numbers Prefaced by DDA-

TAXON	SPECIMEN NUM.
ROSACEAE (Cont.)	
<i>Rosa arkansana</i> Porter	J20
<i>R. blanda</i> Ait.	A8, F20, J40
<i>Rubus strigosus</i> Michx.	A11, F11, H4, I1, I25, J18, J27, J37, J60, J61
<i>Spiraea alba</i> Du Roi	D21, F32, K3
RUTACEAE	
<i>Zanthoxylum americanum</i> Mill.	F27, I28
SALICACEAE	
<i>Populus balsamifera</i> L.	J64
<i>P. deltoides</i> Marsh.	J54
<i>P. grandidentata</i> Michx.	D22, I2
<i>P. tremuloides</i> Michx.	J21, J29
<i>Salix candida</i> Flügge	D11, J49
<i>S. discolor</i> Muhl.	K2
<i>S. exigua</i> Nutt.	I46, J30, J53
<i>S. gracilis</i> Anderss.	F2, G4, I11, K1
SAXIFRAGACEAE	
<i>Ribes americanum</i> Mill.	A9, D16, I20, I26, J77
TILIACEAE	
<i>Tilia americana</i> L.	I6
ULMACEAE	
<i>Celtis occidentalis</i> L.	I32
<i>Ulmus americana</i> L.	H13
<i>U. pumila</i> L.	D28, I13
<i>U. rubra</i> Muhl.	A4, F25, I18
VITACEAE	
<i>Parthenocissus inserta</i> (Kerner) Fritsch	D30, I5, J12
<i>Vitis riparia</i> Michx.	H6, I33, J5, J66