Woody Plants of the College of St. Benedict & Saint John's University

Introduction

There are about 80 species common trees and shrubs that grow on the campuses of St. John's University & the College of St. Benedict. When the settlers arrived in central Minnesota they found a landscape dominated by deciduous forest with scattered wetlands and lakes. Deciduous forest is the predominant vegetation type in this area and is well-represented on both the Saint John's and St. Benedict's campuses.

Central Minnesota is in the Eastern Broadleaf Forest Ecological Province, which is characterized by deciduous trees such as the maples, oak and basswood. Within this province the forest types are further subdivided into sections (*i.e.*, Minnesota & NE Iowa Morainal – MIM), subsections (*i.e.*, Hardwood Hills), and finally by the specific community type.

Broadleaf forest communities may have developed in upland (upland forests) or lower (wetland forest) areas. Drier upland forests can be fire-dependent (FD) or more mesic (MH). Wetland forests can be floodplain forests (FF) or wet forests (WF). Communities are further recognized within these four main forest types (FD, MH, FF, WF). For more details, check the *MN Native Plant Community Field Guide* (http://www.dnr.state.mn.us/npc/index.html).

Some Common Trees & Shrubs

Ash (*Fraxinus*) – The ashes can be recognized by their compound, opposite leaves and the characteristic winged fruits. Two species commonly occur in our area – green ash (*F. pensylvanica)* and black ash (*F. nigra*). Baseball bats are traditionally made from ash and the wood of black ash is used for making baskets.

Basswood (*Tilia americana*) – Basswood or linden or lime can be recognized by the relatively large, heart-shaped leaves that are usually lop-sided at the base. Basswood often grows intermixed with maples. Basswood often occurs in clumps of several stems. The wood is soft and good for carving and the flowers are fragrant and make a great honey.

Birches (*Betula*) – These trees are easily recognized by their beautiful bark. The leaves are simple, alternate and toothed. The flowers occur in clusters called catkins. Common species of birch include white or paper birch (*B. papyrifera*), river birch (*B. nigra*), and yellow birch (*B. alleghaniensis).*

Black Locust (*Gleditsia triacanthos*) – This is a small tree that tends to creep and colonize an area. It is characterized by the alternate, compound leaves with paired, stipular spines. The relatively large white flowers are produced in showy clusters in the early summer and are edible.

Buckeye (*Aesculus*) – Buckeyes are named for the appearance of their distinctive seeds which are produced in a spike-covered pod that splits open. The leaves are opposite and palmately compound. Horsechestnut is a related species that is planted as an ornamental. The seeds of buckeye and horsechestnut should not be roasted over an open fire – they are not the edible chestnuts.

Catalpa (*Catalpa speciosa*) – Cigar-tree is another name for this tree with long, thin brown pods. These trees have large heart-shaped leaves and beautiful white and purple flowers when it blooms in midsummer.

Cherry (*Prunus sp*) – Cherry is a common name for woody plants in the genus *Prunus* that produce a stone fruit. These plants typically have simple, alternate leaves. At the junction of the leaf blade with the stalk there is usually a pair of

glands. The flesh of the fruits can be used to make jelly but the seed and vegetative parts shouldn't be eaten because they contain cyanide-producing chemicals. Chokecherry (*P. virginiana*) is a shrub with that leaves are typically widest above the middle in comparison to black cherry (*P. serotina*) that is a tree with leaves that are widest below the middle.

Dogwoods (*Cornus*) – Dogwoods are shrubs with simple opposite leaves that have very distinctive veins that run along the margin of the leaf to the tip. When you rip open a leaf the veins you will see cobwebby filaments. Dogwoods produce a berry for a fruit.

Elms (*Ulmus*) – The elms are trees with alternate, simple and toothed leaves. The base of the leaves is lopsided. The fruits are flat, round and winged. Until it was decimated by a fungal disease, the American elm *(U. americana*) was the predominant street tree because it has a "Y-shape" that when planted on both sides of a road forms a lovely green cathedral. Another common elm is slippery elm (*U. rubra*), which is named for its mucilaginous inner bark, not its rough sandpapery leaves.

Elder, Red (*Sambucus pubens*) – These plants are understory shrubs or small trees. They have opposite, compound leaves. The stems are relatively fragile because of the large soft pith. The flowers are white in the spring and ultimately yield red berries.

Gooseberry (*Ribes*) – This is a genus of primarily forest shrubs. The leaves are typically palmately-lobed and toothed. The plants may be armed with spines (gooseberries) or not (currants). The fruits are edible and typically used in jams and jellies.

Hackberry (*Celtis occidentalis*) – Perhaps the most distinctive feature of this tree is its warty bark. The leaves are simple, alternate, toothed and have a lopsided base. The fruits are hard but the outer coating can be scraped off and eaten. Witches broom's, which are areas of excessive branching caused by a mite that infects the terminal bud of a branch, often occur on these trees.

Honey Locust (*Gleditsia triacanthos*) – These trees have alternate compound leaves. Some of the leaves may are singly compound while others may be doubly-compound. Our native variety has numerous thorns on the stem. However, the cultivated varieties have been selected for being unarmed. They produce male and female flowers on separate plants. The females produce long brown pods.

Ironwood (*Ostrya virginiana*) – Ironwood is a small tree that grows in the understory of maples, basswood and oaks. They get their name from their dense wood that makes good fence posts. Another name for this tree is hop hornbeam which refers to the clusters of fruits that are reminiscent to hops used in brewing. The bark of these trees is finely lined and seems to twist like a barber-pole.

Juneberry (*Amelanchier* sp.) – These small trees or shrubs are also called shadbush and serviceberry. They produce white flowers early in the spring before the leaves fully develop. The leaves are ovate and toothed. The fruits are red to purplish and are actually similar in structure to an apple. They are edible fresh from the tree or make wonderful jams and pies.

Kentucky Coffee tree (*Gymnocladus dioica)* – Presumably the early settlers made a coffee substitute from the hard seeds of this tree. Stout twigs with a salmon colored pith, large compound leaves and large, stubby brown pods make this tree easy to recognize. It produces the largest leaves of any tree in a northern climate. The tree was likely dispersed by a now extinct herbivore.

Leatherwood (*Dirca palustris*) – This shrub is an indicator of moist rich soil and often occurs with maples and basswood. The leaves are egg-shaped, and the base of the leaf forms a protective cap that covers the bud. The bark is very tough and fibrous and was used for lacing by native Americans. The sap of the tree may cause a dermatitis in sensitive individuals.

Lilac (*Syringa vulgaris*) – This commonly planted shrub is immediately familiar in the late spring when it begins to flower. It has opposite, heart-shaped (cordate) leaves. The fruits are distinctive capsules.

Maples (*Acer*) – The maples are characterized by having opposite leaves and a pair of winged seeds. There are several common maples on campus included sugar maple (*A. saccharum*), Norway maple (*A. platanoides*), Amur maple (*A. ginnala*), box elder (*A. negundo*), and silver maple (*A. saccharinum*). All the maples can be tapped to make maple syrup, but sugar maple is preferred because it has a higher sugar concentration.

Oaks (*Quercus*) – The oaks are trees with simple, alternate and lobed leaves. There are two groups of oaks - the red oaks and the white oaks. The red oaks, which includes northern red oak (*Q. rubra*) and northern pin oak (*Q. ellipsoidalis*), have sharp pointed lobes and take two years to mature acorns. The white oaks such as white oak (*Q. alba*), swamp white oak (*Q bicolor)*, and bur oak (*Q. macrocarpa*), have rounded lobes and acorns mature in a single season. The wood is valuable for lumber. White oak is used extensively in barrel making. Bur oak was the third most common tree at the time of European settlement.

Poplars (Populus) – This group of trees has simple, alternate leaves with a flattened leaf stalk (petiole). The flowers are produced in catkins. The buds are often resinous. There are several species of *Populus* in our area including quaking or trembling aspen or popple (*P. tremuloides)*, bigtooth aspen (*P. grandidentata*), cottonwood (*P. deltoides*) and balsam poplar (*P. balsamifera*). Trembling aspen is now the most common tree in Minnesota and was #2 at the time of European settlement (tamarack was number one).

Prickly ash (*Zanthoxylum americana*) – These shrubs have paired spines at the base of each leaf and can form dense thickets that can be nearly impenetrable. The leaves are alternate and compound. The fruit has a slight citrus odor reflecting its close evolutionary relationship. The wood of the plant was chewed for toothaches because it contains salicylic acid, a precursor to aspirin.

Sumac (*Rhus*) – These shrubs (or small trees) usually grow along roadsides and in other disturbed areas. They have alternate, pinnately compound leaves. They are one of our most beautiful fall plants; the leaves turn a beautiful scarlet color. The red clusters of fruits can be used to make a lemonade substitute. Two common species on campus are smooth sumac (*R. glabra*) and staghorn sumac (*R. typhina*). They look similar with the exception that the twigs of the latter are covered with hairs.

Walnuts (*Juglans*) – These trees have alternate compound leaves. The pith or core of the twigs is brown with partitions. The wood is valuable for woodworking and used for gunstocks and furniture. There are two species - Black walnut (*J. nigra*) and butternut (*J. cinerea*). They look similar except that black walnut twigs and leaves are less hairy and they have round fruits while butternut twigs are hairy and the fruits are oblong. The fruits are covered by a greenish husk that eventually dries up and turns brown. Once this is removed it exposes the hard nut inside. The nuts are loved by squirrels and are very tasty if you have the patience to crack them open.

Willows (*Salix*) – These woody plants are often shrubs or small trees. They have simple, alternate leaves and usually distinctive stipules (leafy appendages at the base). The flowers are in catkins and make the distinctive "pussy willows." The buds are covered by only a single scale. They frequently grow in a wet area. There are 22 native species. They are dioecious.

References

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Checklist of Some Common Species: *The following is a checklist of species that we will likely see.*

ADOXACEAE CAPRIFOLIACEAE) – Honeysuckle Family
- ☐ *Sambucus racemosa* – Red elder

ANACARDIACEAE – Cashew Family
- ☐ *Rhus glabra* – Smooth sumac
- ☐ *Rhus typhina* – Staghorn sumac

BETULACEAE – Birch Family
- ☐ *Betula nigra* – River birch
- ☐ *Betula papyrifera* – White or paper birch
- ☐ *Carpinus caroliniana* – blue beech
- ☐ *Ostrya virginiana* – Ironwood, Hophornbeam

BIGNONIACEAE – Bignonia Family
- ☐ *Catalpa speciosa* – Northern catalpa

CANNABACEAE – Hemp Family
- ☐ *Celtis occidentalis* – Hackberry

CORNACEAE – Dogwood Family
- ☐ *Cornus* sp. – Dogwood

FABACEAE – Bean or Pulse Family
- ☐ *Gleditsia triacanthos* – Honey locust
- ☐ *Gymnocladus dioica* – Kentucky coffee tree
- ☐ *Robinia pseudoacacia* – Black locust

FAGACEAE – Beech Family
- ☐ *Quercus alba* – White oak
- ☐ *Quercus bicolor* – Swamp white oak
- ☐ *Quercus ellipsoidalis* – Pin oak
- ☐ *Quercus macrocarpa* – Bur oak
- ☐ *Quercus rubra* (= *Q. borealis*) Northern red oak

GROSSULARIACEAE – Gooseberry Family
- ☐ *Ribes* sp. – Gooseberry, currant

HIPPOCASTANACEAE (SAPIND–ACEAE) – Horsechestnut Family
- ☐ *Aesculus glabra* – Yellow or Ohio buckeye

JUGLANDACEAE – Walnut family
- ☐ *Juglans nigra* – Black walnut
- ☐ *Juglans cinerea* – Butternut

MALVACEAE (TILIACEAE) – Cotton / Linden Family
- ☐ *Tilia americana* – Basswood, Linden

OLEACEAE – Olive family
- ☐ *Syringa vulgaris* – Common lilac
- ☐ *Fraxinus pensylvanica* – Green ash

RHAMNACEAE – Buckthorn family
- ☐ *Rhamnus cathartica* – Buckthorn

ROSACEAE – Rose Family
- ☐ *Amelanchier* sp. – Juneberry serviceberry, shadbush, Saskatoon
- ☐ *Prunus serotina* – Black cherry
- ☐ *Prunus virginiana* – Chokecherry

RUTACEAE – Citrus Family
- ☐ *Zanthoxylum americanum* – Prickly ash

SALICACEAE – Willow Family
- ☐ *Salix* sp. – Willow
- ☐ *Populus deltoides* – Cottonwood
- ☐ *Populus grandidentata* – Large toothed aspen
- ☐ *Populus tremuloides* – Quaking aspen

SAPINDACEAE – Sapindus or Maple family
- ☐ *Acer platanoides* – Norway maple
- ☐ *Acer rubrum* – Red maple
- ☐ *Acer saccharinum* – Silver maple
- ☐ *Acer saccharum* – Sugar maple
- ☐ *Acer negundo* – Box elder

THYMELAEACEAE – Mezereum Family
- ☐ *Dirca palustris* – Leatherwood

ULMACEAE – Elm Family
- ☐ *Ulmus americana* – American elm
- ☐ *Ulmus rubra* – Slippery elm