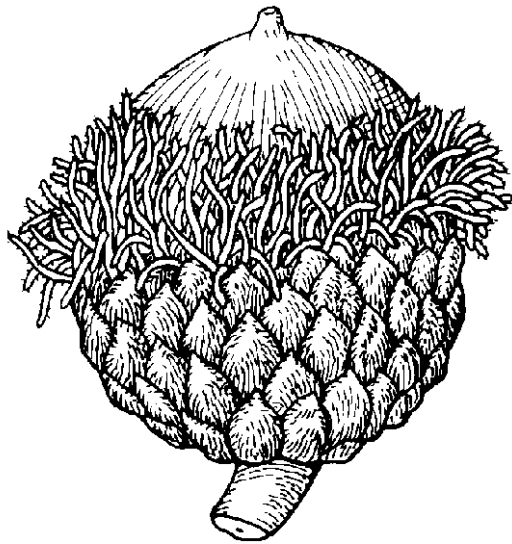


Wildlife and Woody Plants



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To the educator.....

The content of this document has been compiled as an informal source of essential facts and interesting trivia regarding familiar woody plants (trees and shrubs) and their wildlife (and human) associations in the upper Great Lakes region.

It is intended for the use of naturalists and wildlife conservation educators as a resource which enables them to provide clients with information which is both instructional and entertaining.

It has been my humble experience that we don't seem to appreciate names or facts on animals and plants unless the information is accompanied with something interesting and relevant to our personal lives and situations. We seek the trivia. It is the candy we crave.

If you keep this in mind and guide your efforts accordingly, you might improve your ability to ignite a passion for nature in others.

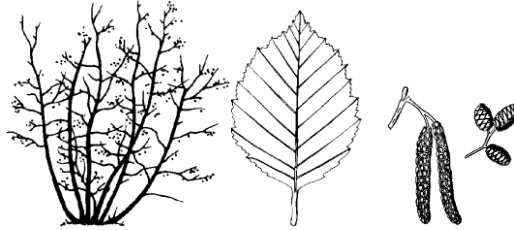
***Christian Wallace Cold
Wildlife Technician and Educator
WDNR Ladysmith 2014***

Wildlife and Woody Plants

General facts and trivia compiled from various sources by Christian Wallace Cold, Wisconsin Department of Natural Resources, Bureau of Wildlife Management.

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Lowlands



Alder, speckled *Alnus rugosa*

A small shrub or tree with several sprawling, crooked trunks.

Prefers wet, sandy or gravel soils.

Shade-intolerant. Fast growing and short-lived.

Wind-pollinated. Tiny, winged seeds are wind-dispersed.

Also reproduces by cloning and layering.

Buds and catkins (flowers):

Ruffed and sharp-tailed grouse.

Seeds (encased in little, woody cones):

Ruffed and sharp-tailed grouse, pine siskin, redpolls, goldfinch.

Winter browse:

Deer, cottontail rabbit, snowshoe hare and moose browse the twigs, but it is not a preferred food.

Bark:

Beaver crop the stems, eat the bark and build dams with it. Beaver cropping perpetuates additional clonal sprouting.

Nest site:

Yellow-bellied & alder flycatcher, Wilson's warbler, Yellow warbler, common yellowthroat.

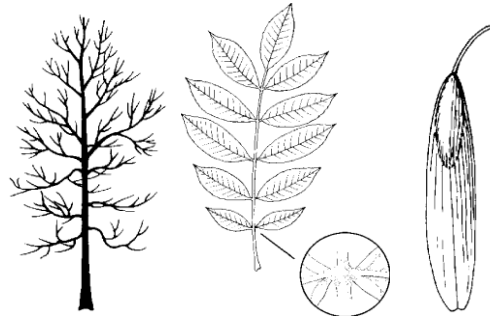
Woodcock frequent better-drained thickets to probe for worms.

Alder shades and keeps trout streams cooler in the summer.

Alder root-mats anchor soil, preventing stream bank erosion.

Lore:

Wood used for heating, cooking (grilling) & smoking fish and meats.



Ash, black *Fraxinus nigra*

Can tolerate some standing water.

May die of thirst during prolonged drought due to shallow root system.

Moderately shade-tolerant.

Sprouts vigorously after cutting or fire.

Slow growing and short-lived.

Wind-pollination and seed dispersal.

When the snow surface is slightly glazed, the winter seeds (like little ice boats) will be blown great distances. They will germinate in the second spring following their dropping.

Host to many insects (leaf miners, sapsuckers, chewers, wood borers), however its usual presence in mixed (as opposed to pure) stands provides some protection from serious outbreaks of insect pests.

Emerald ash borer (EAB) is a serious emerging threat.

Know your quarantined counties for transporting ash products.

Woodpeckers have discovered EAB as a food source in Green Bay (2014).

Foliage:

Deer & moose browse foliage of saplings (often heavily).

Bark and buds:

Beavers, snowshoe hare and porcupine.

Seeds:

Wood duck, ruffed grouse, turkey, many songbirds (esp. evening and pine grosbeaks) and small mammals.

Lore:

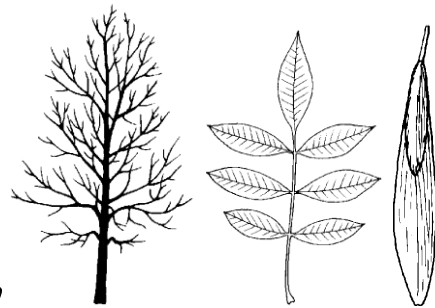
Sometimes called “*Hoop or Basket Ash*”.

Natives pounded annual growth layers loose and cut thin sheets into strips to weave baskets.

Good wood for cooking and heating homes.

Habitat:

Birds associated with black ash swamps include red-eyed vireo, swamp sparrow, common yellowthroat, great-crested flycatcher, ovenbird, veery, American redstart, song sparrow, cedar waxwing, and rose-breasted grosbeak.



Ash, green *Fraxinus pennsylvanica*

The most widely distributed ash in North America.

A fast growing tree of bottomlands and floodplains.

Capable of 60 - 85 feet and 48” d.b.h. (trunk diameter).

Prefers rich, wet, alluvial (water-deposited) soils.

Browse:

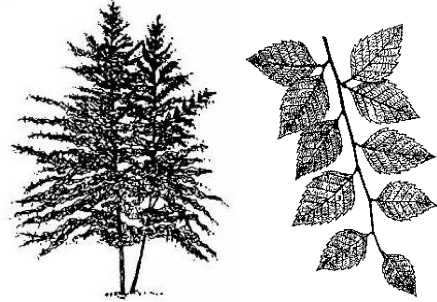
Deer, beaver and porcupine.

Seeds:

Evening grosbeak (winter), wood duck, bobwhite quail, turkey, cardinal, finches, squirrels, chipmunks and mice.

Lore:

Hard and heavy wood has been fabricated into tool handles, paddles & oars, snowshoes, baseball bats and tennis rackets.



Birch, river *Betula nigra*

A medium-sized, slow growing tree of floodplains and swamps. Capable of 80' and 36" d.b.h. (*rarely*).

Prefers deep, rich or clay soils.

Associates with silver maple, red maple, willows and elms.

Ideal seed germination site is on an exposed sandbar.

Although typically a southern species, river birch is found locally on floodplains of the upper Mississippi River drainage (including tributaries).

Seeds (tiny):

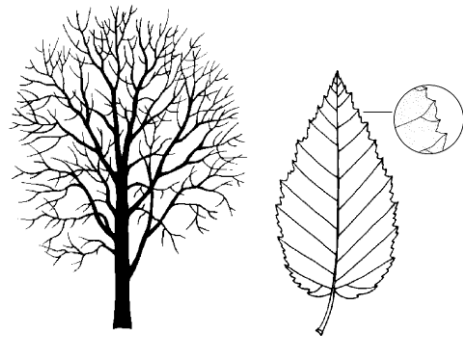
Wild turkey, ruffed grouse, common redpoll, pine siskin, "small birds", chipmunks and mice.

Buds and stems (browse):

Deer, cottontail rabbit (seedlings).

Bark:

Nest material for vireos, warblers and scarlet tanager.



Birch, yellow *Betula alleghaniensis*

Relatively shade-tolerant.

Germination requires soil disturbance and some light penetration.

Sometimes a pioneer species (but competes poorly).

Slow-growing and long-lived (to 200 yrs).

Likes moist soil and cool temperatures.

Competes poorly with sugar maple which produces chemicals that inhibit the growth of yellow birch seedlings (a negative allelopathic relationship).

Requires a “clear deck” for germination (usually rotting stump or bare ground) and will not germinate in heavy leaf litter.

Most mature trees probably germinated after past forest fires.

Large seed crops come at 3-4 year intervals, but few seedlings survive long (smothering, competition and browsing).

Accounts for 75% of birch lumber in U.S.

Foliage:

Larvae of banded purple and white admiral butterflies.

Whitetails heavily browse the saplings (a favorite).

Maple looper (foliage-eating inchworm) provides food for several bird species.

Buds and twigs:

Winter browse for snowshoe hare and deer.

Seeds:

Goldfinch, pine siskin, junco, blue jay, chickadees and mice.

Buds and catkins:

Ruffed grouse, sharp-tailed grouse and prairie chicken.

Sap:

Yellow-bellied sapsucker.

Flowers:

Spring flowers attract insects which feed early migrant warblers.

Nest site:

Red-shouldered and broad-winged hawks seem to prefer this tree.



Boxelder *Acer nugundo*

A small, sprawling tree ...often with multiple trunks.

Our only shade-intolerant maple.
Thrives on bottomlands along rivers, streams and ponds.
Prefers moist, fertile soils - esp. abandoned agricultural land.
Grows rapidly for 15-20 yrs.- then slows down to 90-100 years.

Foliage, bark and twigs:

Deer, elk, moose, cottontail rabbit, snowshoe hare,
beaver, all sp. squirrels and porcupine.

Seeds:

Often persist all winter on trees.

Evening grosbeak (a favorite food), pine and rose-breasted grosbeaks, purple finch, red-breasted nuthatch, ruffed grouse, sharp-tailed grouse, prairie chicken, turkey, black bear, all sp. squirrels, chipmunk and mice.

Sap:

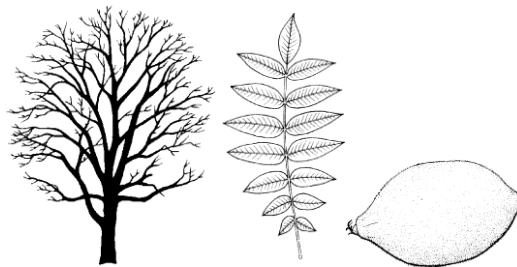
Yellow-bellied sapsucker.

Lore:

Crow Indians made syrup from its sap.

Red and black boxelder bugs congregate on female trees.

Discriminated upon and maligned as a weedy, scraggly and untidy tree. Ignores human standards as a “respectable or attractive” tree. Susceptible to insects, prone to drop branches and sometimes invasive, (but) a true-native with wildlife value nevertheless.



Butternut *Jugulans cinerea*

A fast-growing and short-lived hickory with a crooked or forked trunk.

Capable of 100 feet and 90 years.

Prefers well-drained, rich bottomland soils of floodplains.

Sends down deep, penetrating taproots.

"You rarely find butternut trees of upright character, noble bearing and fine foliage. Most of them look shiftless in shape and attitude and appear to be merely loitering where they grow. The trees are never strong and usually linger out a comparatively short life in a crippled condition."

John Kieran

Nuts:

Oblong (football-shaped), oily nut covered in velvety, sticky husk. Ripened nuts are sweet and delicious if you don't mind deeply-stained fingers. Sweetness and high oil content gives them the highest food value of all hickories and walnuts.

Woodpeckers, turkey, all sp. squirrels, chipmunk, mice, cottontail rabbit, raccoon, opossum, black bear and deer.

Buds:

Wood duck, purple finch.

Lore:

The Iroquois extracted the nut oil and used it for cooking and hair dressing. They tapped the sap for syrup and sugar. They used the boiled root bark as a laxative.

Pioneers pickled the unripe nuts in spiced vinegar (a frontier delicacy).

A declining species, butternut has been severely stricken by an Asian fungus (*Strococcus cankers*) that has spread throughout its range. The disease was first discovered in Wisconsin in 1967. The nuts, once plentiful in grocery stores, are rarely seen today. This fine tree is in big trouble.



Cedar, n. white *Thuja occidentalis*

Actually a species of false cypress.

Oddly, a separate range of habitats: both swamps and dry, calcareous (loves calcium) uplands.

Rare in acid (bog) or muskeg habitats.

Vegetative reproduction via layering and tipping (sprouts from fallen trunk).

Slow growing and shade-tolerant.

To 80 feet and 6 feet d.b.h.

A 1" trunk may be 20 years old!

Capable of 300 years and 125 feet.

Wind- pollinated. Seedlings need constant supply of moisture.

Apparently, this is the only NE conifer that lacks a symbiotic association with a root fungus (*mycorrhiza*).

Shallow roots make it vulnerable to wind throw and drought.

Wind-tipped trees will continue vertical growth (via branches).

Thin bark makes tree vulnerable to fire.

Several sp. beetles, mites & moth larvae utilize foliage.

Evergreen bagworm (most serious pest) is food for yellow-bellied sapsuckers and other woodpeckers.

Tree is often plagued by **carpenter ants** which (in turn) attract pileated woodpeckers.

Primary birds of cedar swamps include Nashville warbler, winter wren, black-throated green warbler and ovenbird.

Nest site:

Black-backed woodpeckers excavate nest cavities in live and dead cedars.

Bark:

Swainson's thrush & red squirrels use strips of fibrous bark for nesting.

Seeds:

Big crop every 5 years.

Pine siskin (primary bird), redpolls and red squirrel.

Foliage:

Browsed by snowshoe hare, cottontail rabbit, red squirrel, beaver, porcupine and deer.

Moose eat it only as a last resort (starvation food).

Lore:

Ojibwa made bitter teas (foliage) to cure headache and (bark) to promote menstruation.

They used the wood for canoe frames and ribs.

This and white birch are the two most-sacred trees to the Ojibwa.

Chokeberry , black *Aronia melanocarpa*

A hardy, multi-stemmed shrub of bogs, swamps and low, wooded areas.

Four to 6 feet tall (max. 8').

Forms dense colonies.

Sun-loving but tolerant of partial shade.

Five -petaled flowers pollinated primarily by bees.

Foliage develops brilliant red, orange or yellow color in fall.

Fruit (purplish-black):

Little, apple-like pomes ripen in August.

Unpleasant when raw....pretty good when cooked.

Ruffed grouse, sharp-tailed grouse, prairie chicken, wild turkey, blue jay, catbird, brown thrasher, robin, cedar waxwing, flicker and meadowlark.

Fruit has higher levels of antioxidant flavonoids and anthocyanins than any other temperate fruit. Also great potential as a natural food colorant. This is generating increasing interest with commercial small fruit producers and cultivars are being developed.

Foliage and buds:

Browsed by whitetail (favored- esp. fond of spring leaves), cottontail and snowshoe hare.

Nest site:

Many shrub-nesting songbirds.

Lore:

Potawatomi used fruit as food and made infusion to treat colds.

Easy to propagate and produce in nurseries.

A very good candidate for wetland reclamation projects.

Cottonwood *Populus deltoides*

The largest (common) deciduous tree in Wisconsin.
Thrives on lowlands near rivers, streams and swamps.
Moist, well-drained sands and silts.
Grows fast (120 feet in 30 years!) Some become giants.
Capable of 140 feet and 8 feet d.b.h.

Foliage:

Beaver, squirrels, deer, elk and moose.

Buds:

Songbirds, ruffed grouse, sharp-tailed grouse and prairie chicken.

Bark:

Beaver, all sp. squirrels, meadow mouse and porcupine.

Lore:

Thick, cork-like bark is suitable for carving.
Not good tree for residential areas as roots will heave sidewalks and drainpipes.
Soft, weak wood warps easily.

Dogwood, gray *Cornus racemosa*

A sun-loving shrub of open woods and edges.
Forms rhizome-sharing clumps.

Fruit (white berries on red stems):

Grosbeaks, cardinal, cedar waxwing, ruffed grouse, sharp-tailed grouse, pheasant, bobwhite quail, black bear, squirrels, chipmunks, raccoon, skunk, beaver and opossum.

Nest site:

Willow flycatcher, gray catbird, yellow warbler and goldfinch.

Lore:

Chippewa pounded the astringent inner bark for use as a treatment for hemorrhoids.

The berries are not edible to humans.

Dogwood, red osier *Cornus stolonifera*

A “winter-hardy”, thicket-forming shrub of swamps, fens, sedge meadows and shorelines.

Widest range of any native dogwood in North America.

Stems redden “most-vividly” in early spring.

Bisexual and insect pollinated- (several sp. of bees & flies).

Foliage and stems:

Deer, moose, elk, cottontail rabbit, snowshoe hare and muskrat.

Foliage eaten by many insects including several moth larva.

Fruit (white):

Grouse (sharp-tails & ruffed), quail, turkey, mallard, black duck, wood duck, woodpeckers, e. kingbird, bluebird, cardinal, catbird, evening grosbeak, rose-breasted grosbeak, yellow-shafted flicker, yellow-bellied sapsucker, scarlet tanager, wood thrush, brown thrasher, cedar waxwing, black bear, raccoon, opossum, chipmunks and mice.

"I like the red dogwood because he feeds October robins."
- Aldo Leopold.

Nest site:

Alder & willow flycatcher, gray catbird, yellow warbler and goldfinch. White-footed mice often recycle old yellow warbler nests as new homes.

Sap:

Spittlebug

Lore:

Bark tea was an effective remedy for diarrhea and a good wash for sore eyes. Dried & grated inner bark was the chief ingredient of *kinnikinnick* (Indian tobacco).
Makes an awesome basket.

Dogwood, silky *Cornus amomum*

A sun-loving shrub of stream banks and swamp edges.

Fruit (dark blue):

Turkey, ruffed grouse, bobwhite quail, wood duck.
Over 90 species of songbirds, including vireos, white-throated sparrow, bluebird, indigo bunting, cardinal, kingbird, thrushes and warblers.

Foliage, buds and twigs:

Deer (browse).

Lore:

The "dogwood" name is supposedly derived from its use as an old folk remedy of washing mangy dogs with an astringent tonic made from the bark.

Elderberry, common *Sambucus canadensis*

A tall shrub that prefers wet, disturbed areas.

Produces copious umbels of purple-black fruits which are rich in vitamins C & A, calcium, iron & potassium.

Fruit (dark purple):

Over 40 species of **birds** eat the fruit including wild turkey, ruffed grouse, pheasant, rose-breasted grosbeak, catbird, indigo bunting, nuthatches, eastern bluebird, robin, cardinal, e. kingbird, yellow-bellied sapsucker, red-bellied, red-headed and pileated woodpeckers, scarlet tanager, phoebe, tufted titmouse, brown thrasher, mourning dove, and rusty blackbird, English sparrow and starling. Mammals include raccoon, opossum, black bear, woodchuck, squirrels, cottontail rabbit, chipmunks, mice and humans (jam, jelly, syrup, wine and vinegar).

Foliage, stems and bark:

Browsed by cottontail rabbit, deer, elk and moose.
A host-plant for Cecropia moth larvae (& cocoons).

Elm, American *Ulmus americana*

Foresters have long considered this a “weed tree” as the *difficult to work with* wood warps easily.

Moderately shade-tolerant.

Tolerant of wet conditions.

Wind –pollination and seed dispersal (samaras).

Seeds require wet ground for germination or desiccate quickly.

Leaves are high in calcium & potassium and yield a rich humus.

Foliage:

Larvae of mourning cloak (black & red caterpillar), question mark and comma butterflies, aphids, sawflies, lace bugs and moth larvae (including those little inchworms which dangle by a thread in your face). Elm leaf beetle (serious pest) a favorite summer source of protein for nesting cedar waxwings.

Buds:

Sharp-tailed grouse, prairie chicken and wild turkey.

Seeds:

Wood duck, ruffed grouse, sharp-tailed grouse, pheasant, turkey, rose-breasted grosbeak, purple finch, goldfinch, clay-colored sparrow, yellow-bellied sapsucker, purple finch, cottontail rabbit, all sp. squirrels, chipmunk and white-footed mouse.

Nest site:

The northern oriole uses drooping outer branches for weaving its hanging nest.
Yields a hard, long-standing, dead snag – a preferred nest site for red-headed woodpeckers.

Lore:

The Iroquois made their canoes from elm bark (not birch). These canoes were heavier (but sturdier) watercraft. Elm snags provide a good anchor for wild grape and Virginia creeper vines....which produce berries for wildlife. Elms which have died recently often have morel mushrooms around their bases.

The tree has been decimated by Dutch Elm disease (sac fungus) which arrived from Asia (studied in Netherlands) to Ohio in 1930. The condition affects all native elms. The tree is in no danger of extinction - but old, magnificent specimens will become increasingly rare.

Elm, slippery *Ulmus rubra*

Fast-growing tree of stream banks, river terraces, bottomlands and moist hillsides (but may be found on drier sites).

Grows more rapidly than American elm.

Capable of 60 feet, 24" d.b.h. and 300 years.

Can tolerate 2-3 months of floodwater.

Seeds:

Available in spring when other seeds are in short supply.

Wood duck, turkey, ruffed grouse, prairie chicken, pheasant, chickadee, purple finch, rose-breasted grosbeak, clay-colored sparrow, house sparrow, fox squirrel, red squirrel and chipmunks.

Sap:

Yellow-bellied sapsucker.

Pollen:

Although wind-pollinated, honeybees collect the pollen.

Buds, bark and twigs:

Winter deer browse.

Sore throat remedy.

Susceptible to Dutch elm disease.

Fir, balsam *Abies balsamifera*

Shade tolerant conifer capable of 82 feet and 40 inches d.b.h. Shallow root system (rarely deeper than 3') makes it vulnerable to wind throw & drought.

Notice the conical spire shape which is designed to shed snow without breaking branches (spruce also have this adaptation).

Thin, resinous bark makes it vulnerable to fire.

Chemicals in needles give tree unique defense against most insect feeders (other than aphids). The chemical mimics a growth hormone which interferes with normal insect metamorphosis.

Nest site:

Yellow-rumped warbler, evening grosbeak (which typically nests in top of 15-20' trees) and catbird.

Needles:

Spruce and sharp-tailed grouse.

Balsam fir is a starvation (stuffing) food for deer.

Browsing by deer may be an indication of a scarcity of preferred deer browse in the area.

Browsing by moose (on the other hand) is normal, and it is considered a favorite and nourishing food for them.

Seeds:

Chickadees, yellow-bellied sapsucker, white-winged crossbill, red crossbill, red-breasted nuthatch, blue jay, chipmunks, mice, red squirrel, and porcupine.

Lore:

The Chippewa inhaled fumes of the pitch as a headache remedy and used pitch as poultice for dressing burns & wounds.

Balsam pitch is also a concentrated and nourishing emergency food.

A very important source of pulpwood.

Chief insect predators of balsam are spruce budworm & balsam fir sawyer beetle (a species of longhorn). Some sawfly larvae are also serious pests.

Hickory, bitternut *C. cordiformis*

A common element of oak-hickory forests.

Capable of 150 feet and 40 inches d.b.h.

Found from gravel uplands to moist flats.

Thrives in rich bottomlands, swamps and floodplains.

Nuts:

Seeds dispersed by squirrels and flooding.

Bitter tasting nuts are not eaten by man, and seem to be less-favored by animals than other hickories.

Even squirrels tend to avoid this nut if alternative foods are nearby.

Turkey, cottontail rabbit, squirrels, chipmunks and mice.

Nuts once pressed for lamp oil & rheumatism medicine.

Hickory nut weevil usually gets 65% of the nut crop.

Bark:

Cottontail rabbit, beaver and mice.

Foliage:

Host to several spectacular moth larvae including luna, funeral dagger and giant regal.

Lore:

Hard (but brittle) wood was once used for wagon wheels.

Honey locust *G. triacanthos*

Medium to large tree 70-115 feet.

Locally common on floodplains of major rivers in s. Wisconsin.

Named for sweetish (edible) pulp on inner-lining of seed pods.

Salt and drought tolerant.

Fast growing. May exceed 120 years.

Tough, brittle wood not widely used for lumber.

Seedlings and saplings:

Browsing and grazing animals.

Seeds:

Deer, cattle, rabbits, squirrels, turkey, pheasant and quail.

Lore:

The thorny trunk armament probably developed as an evolutionary defense against former (now-extinct) canopy-browsers and bark-strippers (ground sloth, mammoth and mastodon).

Hornbeam, American *Carpinus*

Also known as blue beech or “musclewood”.

Thrives in deep, rich, moist soils of bottomlands, floodplains and swamps.

Slow-growing and short-lived.

Solid, stable wood - not subject to cracking or splitting.

Pioneers fashioned bowls from it due to these characteristics.

Not considered commercially valuable due to its small size (13-30 feetrarely to 40 feet).

Foliage:

Deer (not a favorite) elk and moose.

Buds & catkins:

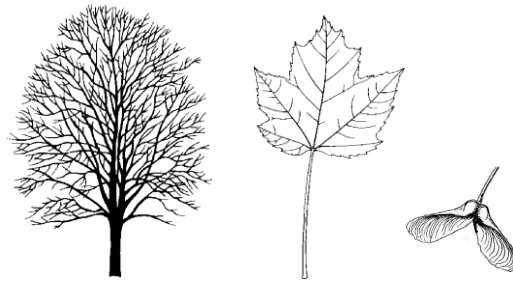
Ruffed grouse.

Seeds:

Wood duck, ruffed grouse, pheasant, quail, Myrtle warbler, red & gray squirrels, chipmunks and mice.

Bark:

Beaver & snowshoe hare.



Maple, red *Acer rubrum*

Many farmers call it “swamp maple”.

Twice a year it puts on a spectacular show, hanging-out multitudes of tiny red flowers in the spring and brilliant red leaves in the fall.

Autumn foliage usually redder on more acidic soils.

Reddest trees are usually males. Female trees usually turn yellow-orange.

May occasionally hybridize with Silver Maple associate.

Browsing stimulates vigorous sprouting from the shallow, spreading root systems.

Seeds:

Red-breasted nuthatch, grosbeaks, purple finch, mice, and chipmunks. Red and gray squirrels harvest large quantities in June.

Bark:

Porcupine, beaver, cottontail rabbit, snowshoe hare, and mice.

Foliage:

A preferred browse for whitetails.

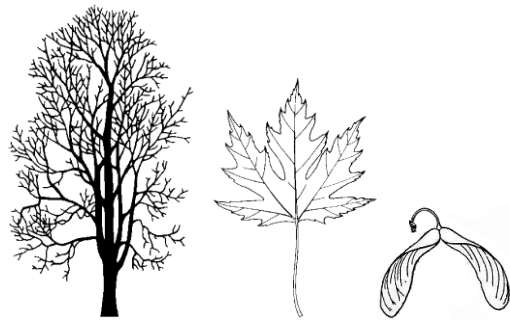
Supports abundance of moth species (larvae).

Lore:

Potawatomi trappers boiled their traps in bark of this species (black dye).

Red maple often suffers from tree canker, which is initiated by tiny egg laying wounds caused by narrow-winged tree cricket in the fall.

Asian longhorn beetle appears to prefer this tree (however) it has a higher success rate (compared to other maples) at maturing to adulthood.



Maple, silver *Acer saccharinum*

Moist soils of riverbanks, yards and streets.

Rapid grower for first 25-30 years. Seldom beyond 130 yrs.

Tolerates flooding but not fire.

Largest winged seeds (samaras) of any native maple.

Large seed crop most years.

Seeds:

Turkey, ducks, finches, grosbeaks (esp. pine & evening), squirrels, chipmunks and mice.

Bark:

Beaver

Foliage and browse:

Rabbits, deer.

Buds:

Early source of food for squirrels who have depleted their winter caches.

Flowers:

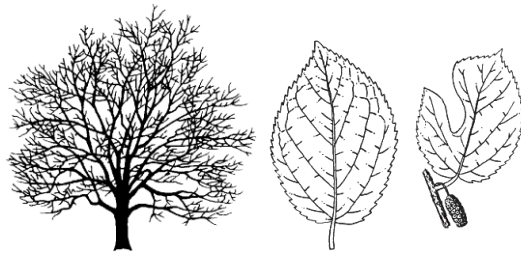
Provides an early source of nectar and pollen for bees.

Nest site:

Orioles show a strong preference for this tree.

Larger branches and trunks are often hollowed by heart rot making this tree especially valuable as a provider of den sites for raccoons, opossum, fishers, squirrels, wood ducks, mergansers, and barred owls.

Although this tree can become quite large, it is never strong and frequently drops branches during storms. The brittle properties of its wood also make it susceptible to ice damage during spring break-up on rivers.



Mulberry, red *Morus rubra*

A cold-hardy, sun-loving tree of moist, fertile lowland soils. Capable of 70 feet, esp. in northern part of range.

Fruit:

Ripen in late spring.

Sweet and juicy but not cultivated commercially in N.A.

Excellent source of antioxidants, vitamins A, C, protein, calcium, iron and fiber. Berries reduce risk of stroke and blood clots.

Many sp. of birds, including catbird, cardinal, grackles, flycatchers and woodpeckers.

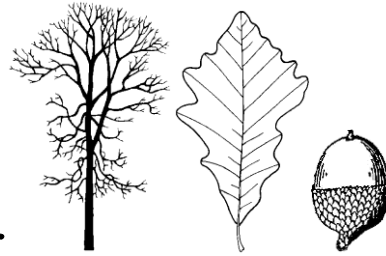
Foliage:

Red admiral and mourning cloak butterfly larvae.

Deer and livestock browse the leaves.

Lore:

Many tribal cultures dried the fruit and mixed it with corn meal in puddings, dumplings and sauces. Bows were made from the branches. The inner bark was fashioned into threads and rope. The roots were used to treat a wide range of ailments (esp. parasitic worms).



Oak, swamp white *Quercus bicolor*

Particular to swamp borders (avoids standing water).

Long-lived (350 years) and slow-growing.

Nuts:

Sweet acorns favored by most wildlife (6% protein & 65% carbohydrate) often sprout right after falling, making them less-palatable to wildlife. Squirrels circumvent this by nipping acorn tips before caching them.

Acorns have lower fat content (caloric value) than red oak, and less (bitter) tannin.

Oak wilt- a fungal disease, is the most destructive disease of all oaks. It is rapidly spreading throughout the Great Lakes states via root grafts, woodpeckers and wood boring insects. While members of the white oak group are more resistant than those of the red oak group, they do eventually succumb to the pathogen.



Spruce, black *Picea mariana*

Our smallest (to 80') and most slender spruce.

Bogs, muskegs and peatlands.

Like firs, tree shape (conical spire) is designed to shed snow.

Slow growing and relatively short-lived (to 150 years).

Some bogs have 6 foot trees that are >130 years old.

Usually a small tree but 80 feet possible.

Moderately shade- tolerant (less-so than balsam fir & w. cedar).

Associates with tamarack...often replacing it on older bogs.
Fire-assisted seed dispersal.

Host to many insect pests (esp. spruce budworm).

Also produces by layering (branch contact w/ ground).

Maturing trees eventually sink in the peat (thus drowning themselves), but leave surviving clones of offspring from prior layering.

Seeds of eastern dwarf mistletoe (sometimes a serious parasite) brought to black spruce via several bird and mammal dispersal agents (esp. chickadees, gray jays and red squirrels).
Not considered an important food source to most wildlife.

Browse:

Starvation (stuffing) food for deer and moose.

Snowshoe hare eats bark, shoots and seedlings, but prefers other trees.

Seeds:

Becomes a prolific seed producer at 10 years of age.

Red-breasted nuthatch, pine grosbeak, pine siskin, red and white-winged crossbills, red-breasted nuthatch, chickadees. Red squirrels, chipmunks and mice clip the cones for seeds, but prefer those of white spruce if given a choice.

Needles:

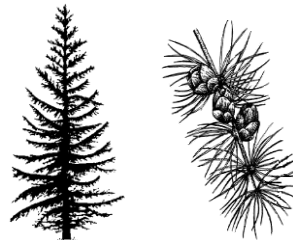
Spruce grouse (almost exclusive winter diet).

Nest site:

Black-backed woodpecker, olive-sided flycatcher, boreal chickadee, kinglets, Cape May warbler and purple finch.

Twigs and bark:

Porcupine



Tamarack *Larix laricina*

The only deciduous conifer in the Great Lakes region.

Although associated with swamps, tamarack grows best on moist, well-drained sites. Slower growth on wetter sites.

Wind- pollinated.

In the north it reproduces mostly by layering (branch sprout). Shallow root system (<2 feet) but spread may be wider than the tree is tall!

Species is relatively immune to most serious fungal diseases.

Bark and twigs (browse):

Whitetails browse young trees, although they don't normally damage them seriously.

Porcupines & hares eat the inner cambium (sometimes causing serious damage or death).

Seeds:

Red squirrels, chipmunks, mice (white-footed & boreal red-backed voles) and red crossbills (north) are major consumers of seeds.

Needles and buds:

Spruce grouse, ruffed grouse and sharp-tailed grouse.

Nest site:

Great gray owl (if existing nest structures are present.)

Black-backed woodpeckers and olive-sided flycatchers.

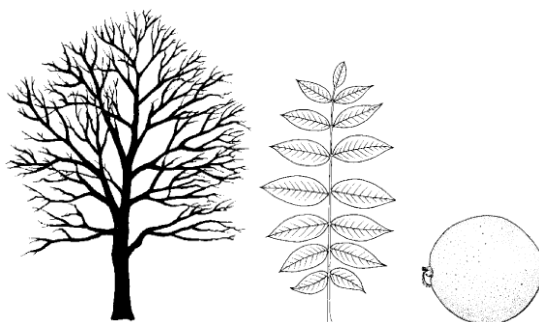
Insects (including pests):

Tree is host to many pine pests.

Where **larch sawfly outbreaks** occur, woodpeckers, robins, jays, cedar waxwings, grosbeaks, sparrows and purple finches respond in great numbers.

Snipe, veeries, common yellowthroats, Nashville warblers, white-throated & song sparrows frequent tamarack stands.

Walnut, black *Jugulans nigra*



An impressive tree of deep, well-drained soils of bottomlands and floodplains.

Slow growth rate but may reach 150 feet (8 ft. d.b.h.) and 250 years.

Produces beautifully-grained, brownish wood used for gun stocks, fine furniture and specialty items.

“Pound for pound and inch for inch” this is the most valuable tree in the country. A large specimen has been auctioned-off (on the stump) for 30,000 dollars.

Years ago...this tree was so abundant that furniture was made from solid walnut. As the trees diminished, remaining stocks supplies were used more for veneer for cabinets and furniture.

Nuts:

Flavorful, but hard-to-extract nut-meat.

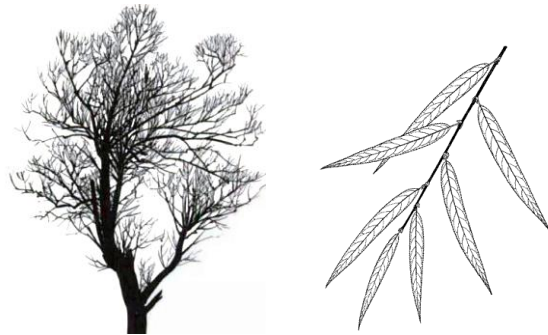
Not grown commercially.

Squirrels, red-bellied woodpecker

Nuts have equivalent caloric value of bacon. Also rich in protein, potassium, iron and phosphorous. Excellent in ice cream and cookies.

Husking the nuts will give your fingers the same iodine-like stains as butternut.

Tomatoes grow poorly in the vicinity of this tree. Tree produces allopathic chemical (acid) which inhibits competitors.



Willow, black *Salix nigra*

America's largest native willow (50 - 140 feet).

Huge, tangled (messy-looking) tree with dark, shaggy bark.

Thrives w/ flooding and silt deposition.

Grows fast but dies young (before 85).

Shade intolerant – poor competitor with other trees – even its own kind. As a result, tree often stands alone, or in company of others of similar age.

Seeds develop and drop when tree is 10 yrs old.

Seed dries quickly and must find moist, exposed seedbed (< 24 hrs) to successfully germinate.

Insect pollinated (body-brush method).

Pollen-eating beetles rely on abundant flowers in season.

Foliage:

Willow lace bugs suck sap from beneath leaves.

Huge variety of insects (leaf-miners, chewers, borers, sap-suckers, gall-makers) depend on twigs & foliage, incl. many larval butterfly species including Compton and Milbert's tortoise shell, mourning cloak, viceroy, white admiral (banded purple) and red-spotted purple.

Bark:

Beaver favor this tree, (but prefer aspen when available).

Sap:

Yellow-bellied sapsuckers chisel sap-drinking “wells” in bark.

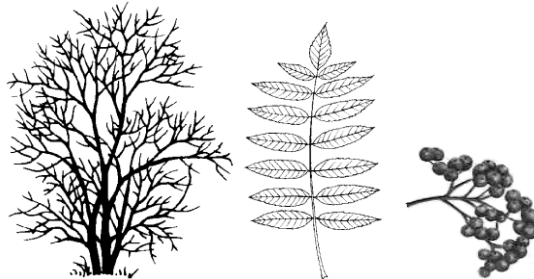
Lore:

Main ingredient in aspirin (salicylic acid) was first discovered in willows.

Good for erosion-control (include several other willow sp.).

UPLANDS

Ash, mountain *S. americana*



Not a true ash.... (rose family).

Slow-growing and short-lived tree of rocky sites & moist slopes.
To 30 feet and 20 inches d.b.h.

From rich woodland soils to nutrient-poor fringes of bogs.

Produces clusters of red-orange, pea-sized, berry-like fruits.

Fruit :

Persists into winter.

Is not palatable (to us) but makes good jam or jelly.

Is high in vitamin C and low in fat.

Fruit & bark once used to relieve toothache.

Ruffed grouse, sharp-tailed grouse, thrushes (including robin), catbird, grosbeaks and Bohemian waxwing (winter), fisher and pine marten.

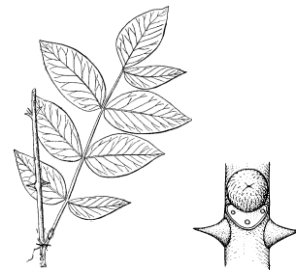
Sometimes fermenting fruit intoxicates birds that overindulge.

Buds and stems:

Winter browse for deer and moose.

Sap:

Yellow-bellied sapsucker chisels rectangular sap wells for drinking and bonus insects that come.



Ash, n. prickly *Zanthoxylum americanu*

A small, spiny, fast-growing, shrub-like tree of moist ground and open woods.

Not a true ash (rose family).

Relatively shade-intolerant (partial shade OK).

Foliage:

Giant swallowtail butterfly larvae (orange). This southern butterfly (largest in N.A.) made a major incursion into Wisconsin in summer of 2012.

Seedlings:

Cottontail rabbit (winter browse).

Seeds:

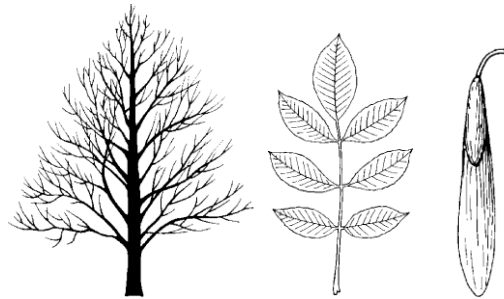
Pheasant, bobwhite quail, vireos, cottontail, chipmunks and mice.

Brood Cover:

Dense thickets harbor grouse and quail.

Lore:

Fruit and bark was once chewed to relieve toothache. Aromatic bitter oil from bark & roots was used to treat rheumatism.



Ash, white *Fraxinus americana*

Our largest, most common and most valuable native ash.

Prefers rich upland soils.

Exceptional wood is strong, light-weight and durable (furniture, implements, musical instruments, bats & skis).

Wood can be bent into shapes with steam.

May reach 125 feet and 7 feet d.b.h.

Ranks with oak and hickory as firewood.

Foliage:

Fair summer browse for deer.

Buds & stems:

Poor winter browse for deer.

Seeds:

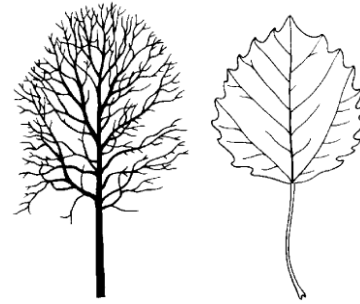
Wood duck, bobwhite quail, purple finch, pine grosbeak, fox & gray squirrel, chipmunks and mice.

Bark:

Beaver, porcupine, cottontail rabbit & snowshoe hare eat the bark of young trees.

Lore:

Crushes green leaves relieve pain of bee sting.



Aspen, big-toothed *P. grandidentata*

Thrives on well-drained, sandy, upland soils.

Grows fast but doesn't live long (~70 years).

Shade - intolerant.

Clonal-sprouting & seed-dispersed pioneer of burned-over sites.

Buds and catkins:

Ruffed grouse eat the staminate flower buds in winter and the catkins just prior to the breeding season.

Quail, purple finch, towhee and porcupine.

Foliage, bark & stems (browse):

Deer, elk, moose, beaver, muskrat, cottontail rabbit, snowshoe hare and porcupine.

Ruffed grouse eat the highly-palatable leaves in summer.

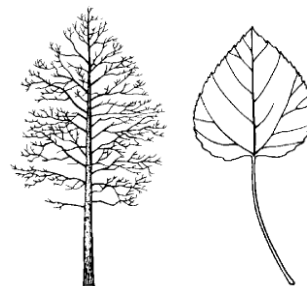
Forest tent caterpillars periodically defoliate entire stands.

Lore:

The Ojibwe scraped, boiled and ate the cambium
(*something like scrambled eggs*).

The best of aspens for lumber and pulpwood.

More disease-resistant than quaking aspen.



Aspen, quaking *Populus tremuloides*

A pioneer species which establishes and grows rapidly.

Leaves quiver or shake (quake) in the slightest breeze.
Widest distribution of all North American trees.
Tolerates many soil types (sand to clay) but thrives on rich, porous & “limy” soils.
Attains 30-60 feet ...rarely to 100’ and 23” d.b.h. (West).
May live 200 years in the West, but usually 70 in Wisconsin.
A root system clone in Minnesota has been aged at 8000 years!

Foliage and twigs:

Deer, elk, moose, cottontail rabbit, snowshoe hare, pocket gopher, mice, voles, porcupine.
Aspen browse is usually out of reach to deer in 6-8 years.
Black bear relish the fresh spring leaves.
Mourning cloak and viceroy butterfly and poplar sphinx moth larvae.
More than 300 insect species use this tree.

Buds:

Grouse eat 45 buds per minute, satisfying their daily requirements in 15 minutes of “budding”.

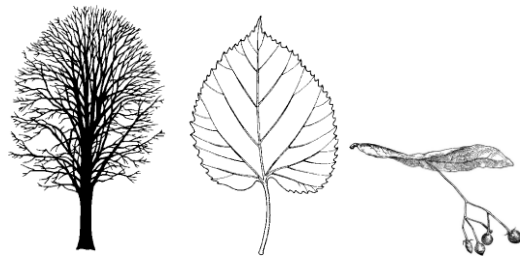
Bark:

Elk, beaver, porcupine, cottontail, and snowshoe hare.
One acre of aspen can support a beaver colony for 3 years.

Lore:

Look for delicious oyster mushrooms on dead trees shortly after a period of heavy rain.

Mixed with other wood chips, the pulp is used for many paper products.



Basswood *Tilia americana*

Prefers moist, well-drained sandy or clay-loam sites.

Associates with sugar maple, paper & yellow birch & w. pine.
Fast growing (130' & 48" d.b.h.) Moderate life of 85-90 years.
Shade-tolerant. Prolific stump-sprouter.

Leaves (rich in calcium, nitrogen & potassium) improve soil.

Foliage bark and browse:

Deer, cottontail rabbit, snowshoe hare and porcupine.

Rabbits and hares are the primary pests of seedlings.

Seeds:

Squirrels, chipmunks, cottontail rabbit, quail, Franklin's ground squirrel and mice. Very few birds are known to eat basswood seeds.

Nest and den site:

Hollow basswoods (heart-rot fungus) have served as nurseries for untold generations of raccoons, opossums, fishers, bobcats, wood ducks, mergansers, squirrels, owls and honeybees.

Lore:

The fibrous inner bark was used by natives to make tangle-free rope and thread for binding-up wounds.

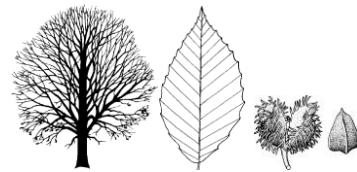
The Iroquois used basswood for false face masks.

Basswood honey is unsurpassed for flavor and delicacy.

The wood is important commercially for cabinets, musical instruments, carvings and paper pulp.

Many insects trouble this tree, but few damage it seriously.

Beech, American *Fagus grandifolia*



A handsome, sturdy, imposing tree of moist, fertile (esp. limy), well-drained soils.

A shade-tolerant, climax forest associate with sugar maple.

Capable of 120 feet and 400 years.

Smooth, light gray bark (even into old age).

Shallow root system with deep taproot (but still susceptible to drought).

Nuts:

Sweet and nourishing (22% protein) but small and hard to extract from leathery shell.

All sp. squirrels, chipmunks, black bear, raccoon, opossum, woodchuck, mice, ruffed grouse, spruce grouse, wild turkey, wood duck, blue jay (important cacher and seed- dispersal agent), tufted titmouse, rose-breasted grosbeak, purple finch, grackle, white-breasted nuthatch, yellow bellied sapsucker and red-bellied woodpecker.

A poor mast year will visibly thin squirrel populations.

Bark:

Porcupine and beaver.

Foliage:

Host plant for larvae of many moths (beech leafyter and saddled prominent)and butterflies (early hairstreak and beech-watcher).

Nest and den site:

Tufted titmouse, Acadian flycatcher, red-shouldered hawk and porcupine.

Lore:

Early settlers extracted nut oil for cooking and lamps.

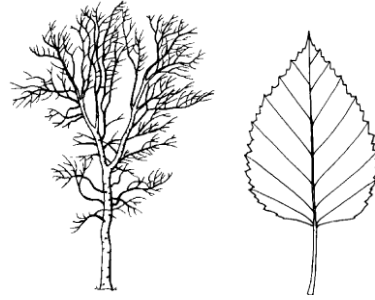
Was important staple of the extinct passenger pigeon.

Young leaves can be cooked as “greens”.

Dead stumps - a good place to find oyster mushrooms.

Lumber is used for flooring, wood handles, food containers and butcher’s blocks.

Beech bark disease, a European insect (beech scale) and fungus (Neonectria) association which entered America around 1890, arrived in Wisconsin in 2009. In 2013 it was found in Door County. Only 1-5% of our beeches appear to be resistant. Trees are now (2014) being cut in portions of Door County as a measure to slow the progress of the disease. Experts believe that most American beech in Wisconsin will eventually die or be severely deformed.



Birch, paper *Betula papyrifera*

An early-successional boreal forest species.

Capable of 85 feet and 30" d.b.h.

Doesn't thrive where average July temp exceeds 70' F.

Found in both dry and moist forests.

Likes moist bottomland openings but adapts to dry, sandy soils.

Not a clonal species (but) produces multiple sprouts from fire-killed stumps.

Wind-dispersed seeds.

Grows fast but dies young (60-80 years).

Foliage and browse:

Several orders of insects (encompassing hundreds of species), deer, elk, moose and porcupines.

Bark :

Bronze birch borer (most serious insect pest), deer, porcupine, cottontail rabbit, snowshoe hare, moose and beaver.

Bark also used as nest material by Philadelphia vireo and black-throated green warbler.

Inner bark (cambium) is edible as an emergency food.

Catkins:

Chickadees, redpolls, pine siskin, fox sparrow.

Seeds:

Pine siskin, chickadees and redpolls, purple finch, fox & tree sparrows, yellow-bellied sapsucker, sharp-tailed grouse, greater prairie chicken, chipmunks and mice.

Buds:

Ruffed, sharp-tailed, and spruce grouse.

Sap:

Yellow-bellied sapsucker (fungal cankers are a favorite feeding site for several woodpecker species).

The sap is also relished by humans when converted into wine, vinegar, beer or syrup.

Fungal cankers are a favorite feeding site for woodpeckers.

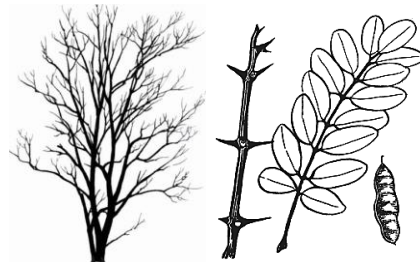
Lore:

Birch bark makes excellent fire tinder...even when damp.

The bark was used by Ojibwa for dwellings, canoes, containers (*mukuks*), funnels, moose calls, torches and covering the dead.

The canoes made from birch bark were stitched over a frame of white cedar with spruce roots. The seams were sealed with pine, balsam or spruce resin. In the 1700's great fur companies (N.W. & Hudson's Bay) hired natives to construct 36' bark canoes which floated 4 tons of goods and 12-16 paddlers!

"Wigwaeatig" continues to be one of the most highly-regarded and venerated (sacred) of trees to the Ojibwa.



Black locust *Robina pseudoacacia*

Thrives on moist, limy soils, often along roads and urban areas. Originated in Appalachians & Ozarks, but now widely cultivated and established.

Durable wood for fence posts & railroad ties.

Grows rapidly.

Foliage:

Deer

Flower nectar:

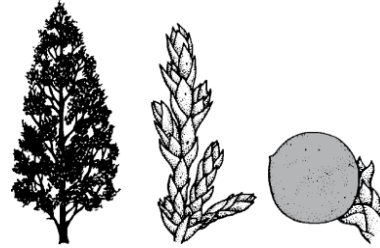
Bees produce a good grade of honey.

Seeds:

Squirrels, turkey and quail.

Lore:

The hard, heavy and durable wood was once used extensively in shipbuilding. It was exported to England in the 19th century for this purpose.



Cedar, e. red *Juniperus virginiana*

Lovely and useful aromatic tree.

Most widespread conifer in eastern North America.

Randomly located on overgrown pastures, hillsides and dry, open woodlands.

Capable of 81 feet and 40" d.b.h.

Slow growing to 350 years.

Drought-resistant. Tolerates poor soil and rocky ground.

Aromatic moth-repellant wood is used for closets and chests.

Fruit:

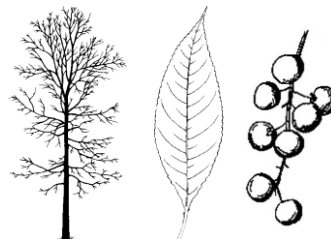
Cedar waxwing (principal customer), grouse, quail, pheasant and turkey.

Bark:

Fibrous - used by many birds to build and line nests.

Lore:

Blue-gray fruits are used to flavor gin.



Cherry, black *Prunus serotina*

Capable of 130 feet and 6 feet d.b.h.

Most live to 80 years but capable of 200 yrs.
A commercially valuable hardwood and wildlife tree.

Foliage and twigs:

Toxic to cattle and humans (hydrocyanic acid).
Deer and moose browse it heavily (especially in the spring when it is most palatable).
Tiger swallowtail butterfly host plant.

Fruits:

Over 200 species of birds including ruffed grouse, pheasant, cedar waxwing, rose-breasted grosbeak.
Red and gray fox, red squirrel, striped skunk, black bear, raccoon, opossum and white-footed mouse (who also consumes the pits).

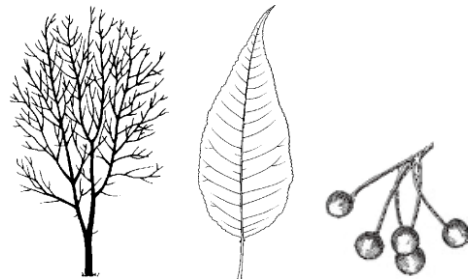
Flowers:

Insect pollinators also attract insectivorous birds (esp. warblers and vireos).
2013: A massive irruption of Blister beetles consumed entire blossoms on blooming trees throughout northern Wisconsin.

Lore:

Pioneers put berries in rum or brandy (popular *Cherry Bounce*).
Hard, heavy, stable, reddish-brown wood is used for gunstocks, furniture and musical instruments.
Today, most trees are cut young (wood is too-valuable to ignore).

Susceptible to tent caterpillars, fires and black knot disease.



Cherry, pin *Prunus pensylvanica*

Also called bird cherry or fire cherry.

Pioneers-in on burned-over areas.

A cold-hardy, shrubby little tree which grows to 30 feet.

Grows fast but dies young (25-30 years).

A “fugitive species” (seeds may survive >50 yrs. of dormancy).

Insect pollinated.

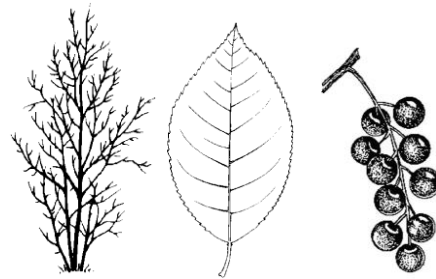
Fruit:

Over 23 species of birds, including grosbeaks, waxwings, robin and other thrushes.

Fifteen mammal species, including black bear, raccoon and opossum.

Buds, bark & stems:

Winter browse for moose.



Chokecherry *Prunus virginiana*

A common shrub or small tree with wide distribution.

Pioneer species on cutover lands or abandoned farmland.

Prefers moist soils and open areas.

Does not thrive in poorly-drained or heavy (clay) soils.

Fast-growing, but short-lived.

Capable of 30 feet and 10” d.b.h.

Fruit:

Ruffed grouse, sharp-tailed grouse, prairie chicken, pheasant, bobwhite quail and over 25 species of songbirds.

Good to eat when fully-ripe...otherwise astringent, “puckery” effect.

Twigs and leaves:

Deer

Buds:

Ruffed grouse and sharp-tailed grouse.



Downy Juneberry *A. arborea*

Also known as serviceberry or saskatoon (in Canada).
A small understory tree of dry to moist, well-drained slopes and streamsides.

Usually 8-15 feet but capable of 50 feet.

Occupies lighter clays to loamy and sandy soils.

Name a misnomer....fruit actually ripens in July (in WI).

Fruits:

Thrushes, cedar waxwing, bluebird, cardinal, catbird, orioles, grosbeaks, blue jay, crow, flicker, chickadees, robin, scarlet tanager, brown thrasher, tufted titmouse, towhees, veery, downy & hairy woodpeckers, pheasant, grouse, squirrels, chipmunks, mice, black bear, raccoon, opossum and striped skunk.

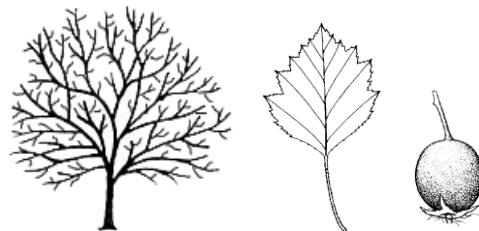
Substitute as a blueberry (but difficult to pick).

Some consider the fruit dry and not tasty (*not me*).

Used in pies, puddings and muffins (but fruit is slow to ripen).

Leaves and twigs (browse):

Deer



Hawthorn *Crataegus sp.*

One of the most hardy and adaptable of treesable to tolerate waterlogged and excessively dry soils and industrial pollution.

Hawthorn groves are often an indication of old pastures.

Fruit:

Many of us have nibbled these meager, little apples (haws) as children.

Low wildlife value but appreciated most in late winter. Ruffed and sharp-tailed grouse, pheasant, turkey, robin, pine grosbeak, fox sparrow, cedar waxwing, wood duck, deer, black bear, raccoon, opossum, cottontail rabbit, striped skunk, coyote, red fox, gray and fox squirrels, chipmunks and mice.

Foliage:

Deer. Many insect species, including aphids, lace bugs, gnats and moth larvae - including the hummingbird clearwing (a daytime-flying sphinx moth).

Nectar:

Bees, flies and beetles.

Nest site:

Mourning dove, cuckoos, willow flycatcher, catbird, brown thrasher, yellow warbler, cardinal and loggerhead shrike (a WI endangered species).

Lore:

Natives squeezed, dried and stored the fruit as little fruitcakes for winter cooking. Thorns were used as awls. Root was used to relieve menstrual pain.

Wormy fruits may be infested with codling moth larvae – the most serious pest of commercial apple orchards.



Beaked



American

Hazelnut *Corylus sp.*

Common nut-bearing, shade-intolerant **shrubs** of forest edges. Produces clone thickets due to shared root systems.

Small, hard-shelled nuts are 25% protein, 60% fat and the rest carbohydrates (similar energy value to bacon).

Nuts are first produced at sixth year. Shrub lives to 40 years.

Nuts:

Deer, chipmunks, squirrels, mice, turkey, ruffed grouse, wood duck, blue jay, downy & hairy woodpeckers, pheasant, raccoon, opossum and black bear.

Snout beetle larvae often get > 50% of seasonal nut crop.

Leaves:

Larvae of dusky-winged butterfly, leaf crumpler moth and other butterflies and moths.

Bark :

Beaver and snowshoe hare.

Buds and catkins:

Ruffed grouse (winter staple) and sharp-tailed grouse.

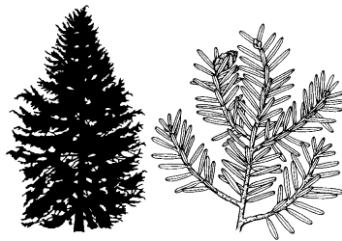
Winter browse:

Deer, cottontail rabbit, snowshoe hare, beaver & moose.

Shelter:

Dense thickets are used by woodcock, grouse and small mammals.

Lore: Traditional Ojibwa peanut butter substitute.



Hemlock, eastern *T. canadensis*

Graceful, lofty evergreen of pyramid shape & feathery foliage. Prefers cool, moist, acidic soils.

Forms “imposing groves” on rocky hillsides.

A sapling can grow unnoticed for a century....then takes-off when a fallen comrade offers a canopy opening.

Becomes the dominant, climax, “super-canopy” species because it outlives its competitors (600 to 1000 years).

A keystone species (has **major influence** on ecosystem).

The bark was once used in the commercial tanning industry. In 1887 New York was in full production. Entire groves were felled (or stripped) just for their bark. Within 14 years the industry collapsed. The trees were essentially gone.

Seeds:

Pine siskin, chickadees, red and white-winged crossbill.

Foliage:

A favorite browse for deer and porcupine.

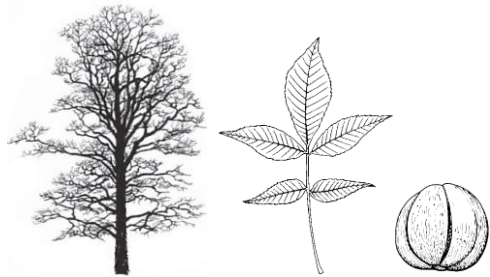
Porcupines clip branchlets from the canopy (eating only the new needles and discarding the rest), which drop and litter the ground. As deer congregate in hemlock groves during severe winters (deer yards) the porcupine trimmings can be a lucky find for undernourished deer.

Steeped needles make a tea rich in vitamin C.

Nest site:

Golden-crowned kinglet, black-throated green warbler, black-throated blue warbler, pine siskin, dark-eyed junco, magnolia warbler and Blackburnian warbler.

Not recommended for campfires - throws dangerous sparks.



Hickory, shagbark *Carya ovata*

To 150 feet and 5 feet d.b.h.

Wide range of tolerance - both dry, upland slopes and deep (but well-drained) lowlands and valleys.

Not as abundant as bitternut hickory (rarely dominant).

Slow-growing and widely scattered tree.

Difficult to transplant.

Nuts (sweet and aromatic with thick husk):

Gray, fox, red and flying squirrels, woodchuck, deer, raccoon, opossum, black bear, mice, chipmunks, wild turkey and white-breasted nuthatch.

Lore:

Nuts once a staple fall food of many tribes (and settlers).

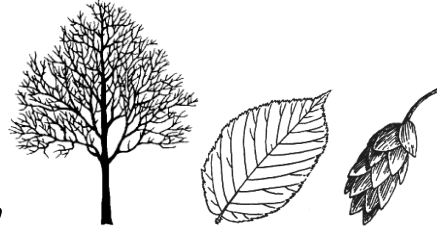
One of the most valuable of American woods (tough & resilient) used for wagon wheels and axe/maul handles.

Wood also used to cure meats (ham & bacon).

Wood is not widely-available today.

Fuel value: 1 cord equivalent to 1 ton of anthracite coal.

Hornbeam, e. hop *Ostrya virginiana*



Also known as ironwood.

A small to medium-sized tree (23-40 ft.) of both sandy and moist, fertile (but well-drained) soils.

Achieves 95-140 years.

Usually found in climax forest community.

Never a dominant tree... (a subordinate species).

Medium growth rate but short life.

The hard, durable wood is used locally for tool handles but small size makes the tree “commercially unimportant”.

Foliage and stems:

Deer winter browse (but only incidental).

Bark:

Beaver (3rd choice after aspen & alder)

Catkins & buds:

Ruffed grouse.

Seeds:

Ruffed grouse, sharp-tailed grouse (a preferred food), turkey, bobwhite quail, purple finch, rose-breasted grosbeak, downy woodpecker, cottontail, squirrels, chipmunks and mice.

Ironwood is relatively immune to most insect and diseases.

Maple, mountain *Acer spicatum*



A small shrub-like understory tree of cool, moist woods.

Crooked trunk with multiple, irregular, slender, straight branch stems.

Well-drained, moist soils along streams, ravines and rocky hillsides.

Shade-intolerant but occasionally found in partial shade.

Often forms thickets.

Associates with beaked hazel.

Becomes decadent (declines) at 40-50 years.

Insect-pollinated (unlike most maples).

Foliage:

Several insect species including maple leaf blotch miner, red-crossed stinkbug and white triangle leaf-roller.

Buds:

Ruffed grouse

Browse:

Winter browse for deer, cottontail and snowshoe hare.

All-season preferred browse for moose.

Tolerates repeated and heavy browsing – resprouts best after 80% pruning. Often the dominant shrub in winter deer yards and recent cutovers.

More palatable than sugar maple but not as good as red maple.

Grows out of (deer) browse range by 3 years.

Bark:

Moose, deer and beaver.

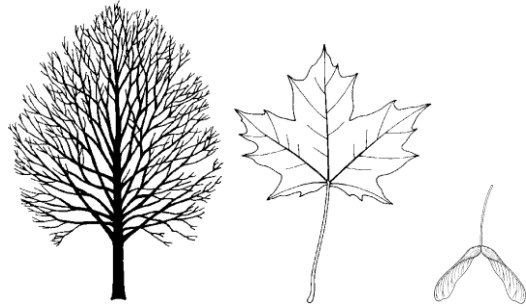
Lore:

Natives infused the piths of young twigs to produce treatment for eye irritations and made poultices from boiled root chips.

Sap can be boiled for syrup or sugar.

Insect pests:

Asian long-horned beetle, maple leaf blotch miner, red-crossed stinkbug, white triangle leaf-roller.



Maple, sugar *Acer saccharum*

Wisconsin state tree.

Grows best on deep, rich (heavy), well-drained soils.

A dominant, climax forest tree.

Capable of 400 years and 84" d.b.h.

Associates with yellow birch, black cherry, red oak, white pine and hemlock.

Shade-tolerant (especially seedlings). Intolerant of air pollution.

Bark, buds & leaves:

Deer, squirrels, rabbits, hares and porcupines.

Seeds:

Grosbeaks, purple finch, red-breasted nuthatch, chipmunks and mice.

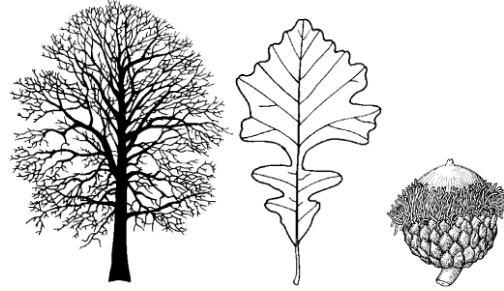
Sap:

(2%-6% sugar) Yellow-bellied sapsucker, red squirrel, and many insect species.

Insect consumers:

Apids & scale insects abound! (*Ants will attend to them like little dairy farmers*).

Cankerworms (those inchworms that hang by a thread in your face.), rosy maple moth, green-striped maple worm, forest tent caterpillar, leafcutters and petiole-borers (sawfly larvae), fiery searcher (a black beetle that hunts insects & larvae), sugar maple borer (a long-horned beetle), maple borer (a wood boring wasp), snow flea and wood gnat.



Oak, bur *Quercus macrocarpa*

Although typically a prairie-savannah tree, this slow-growing, drought and fire-resistant oak may also occur in moist bottomlands (especially in the north).

Thick bark (fire defense). Branches often have corky ridges. 140 feet and 7 feet d.b.h. Lives to 500 years.

Wood (often sold as white oak) is hard, heavy and durable.

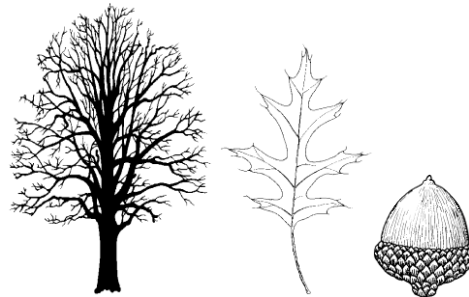
Lumber often sold as “white oak” for making furniture.

Acorns:

Nuts $\frac{3}{4}$ -1” in Wisconsin....2” in Kansas!

Nuts are “somewhat sweet” and edible, but less-sweet than swamp white oak.

Deer, squirrels, chipmunks, woodchuck, mice, cottontail rabbit, raccoon, opossum, black bear, wood duck and turkey.



Oak, n. pin *Quercus ellipsoidalis*

Southern Wisconsin is the northern range limit.

A tree of upland woods but sometimes near streams and ponds.

Most shade-intolerant of all Great Lakes oaks.

Found on rich, well-drained (incl. clays) to sandy, acidic soils.

Associates with jack pine in the north.

Moderate to fast growing.

85% of cut stumps will resprout.

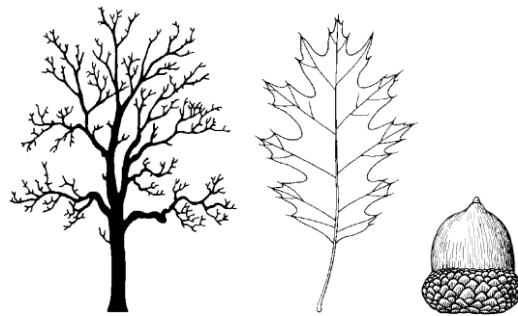
Attains 91 feet, 52” d.b.h., and 100 years.

Nuts:

Deer, black bear, raccoon, opossum, squirrels (gray squirrel prefers red oak to all other oaks), chipmunks, mice, wild turkey, ruffed grouse, sharp-tailed grouse, pheasant, grackle, blue jay, mallard, black duck, pintail, gadwall, goldeneye, hooded merganser, redhead, green-winged teal, wood duck, weevils.

Foliage, buds and stems:

Deer, cottontail rabbit & snowshoe hare (new growth is most palatable).



Oak, n. red *Quercus rubra*

Trees of red oak group highly variable and subject to hybridize – making ID sometimes difficult.

A moderate to fast growing tree of deep, fine soils.

Thrives best on north or east slopes.

Attains 112 feet , 7 feet d.b.h. and 400 years.

Nuts:

Deer, black bear, raccoon, opossum, squirrels (gray squirrel prefers red oak to all other oaks), chipmunks, mice, wild turkey, ruffed grouse, sharp-tailed grouse, pheasant, grackle, blue jay, mallard, black duck, pintail, gadwall, goldeneye, hooded merganser, redhead, green-winged teal, wood duck, weevils.

Nuts require 2 years to mature. Good crop every 2-5 years. Acorn is low in protein (4-5%), phosphorous & crude fiber, but high in starches, sugar & fat.

Foliage, buds and stems:

Deer, cottontail rabbit & snowshoe hare (new growth is most palatable).

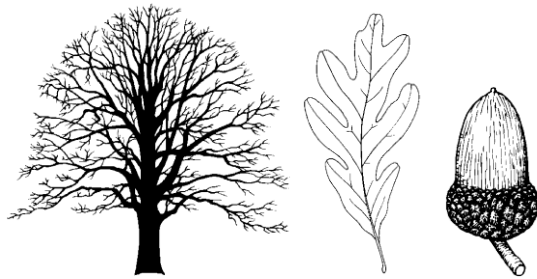
Roots:

Pocket gopher

Lore:

The wood is not as resistant to decay as white oak.
Look for bright orange and yellow “chicken mushroom”
(sulfur shelf) on dead stumps in June and July. Very good
when deep fried.

**Trees of the red oak “subgenus” are the most susceptible
to oak wilt (fungus). To prevent spread of wilt, don’t prune from
April through July.**



Oak, white *Quercus alba*

A massive sprawling, deep-rooted tree of rich uplands, moist
bottomlands, sandy plains and dry, gravelly slopes.
Capable of 182 feet, 5 feet d.b.h. and 600 years.
Majestic in old age...many famous specimens still exist.
Found on sandy, gravelly or loamy soils....but thrives on deep,
rich, well-drained loams.
Reputation as a slow-grower on “marginal” soils.
May be America’s most abundant native tree.

Nuts:

Deer, black bear, raccoon, opossum, cottontail rabbit,
tree squirrels, ground squirrels (including woodchuck),
chipmunks, mice, turkey, ruffed grouse, greater prairie
chicken, pheasant, mallard, wood duck, red-bellied & red-
headed woodpeckers.

*The acorns are usually eaten fresh as once they start to
germinate they become less-digestible. Acorn crop
failures have been correlated with increases in bear
damage to crops, livestock and bee hives.*

Acorns develop each year. Germinate quickly.
Bumper crop every 4-6 years.
Acorns high in carbohydrates but lower in fat than other oaks.

Buds, twigs and foliage:

Deer eat young shoots.
Dried leaves eaten in fall & winter (but not a preferred browse for deer).

Lore:

Acorn meal was a principal ingredient of a hard, dry bread which was a staple in the diet of many native tribes.
Natives also boiled the bark into a concentrated astringent (and antiseptic) wash for treating abrasions and hemorrhoids.
One of our most commercially-important hardwoods.
Support timbers (ship masts prior to steel), whiskey barrels, furniture and caskets.

Osage orange *M. pomifera*



A medium-sized thorny tree of deep, rich bottomlands.
To 65 feet and 36 inches d.b.h.
Native to Midwest states but widely planted in s. Wisconsin.
Was used as a windbreak in agricultural areas.
The wood was once highly valued by Indians for making bows.
Large, heavy fruits are a chore to clean up.

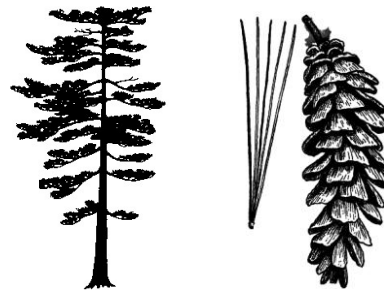
Seeds:

Squirrels tear fruit apart to get at the seeds.

Fruit:

Edible.... but not very tasty.
Home folk-remedy as household insect repellent.

Prehistoric horses were likely the primary fruit consumers and seed-dispersal agents. Scientists speculate that ground sloths, mastodon, mammoth and gomphotheres also consumed the fruit and “sowed the seeds through their entrails”. The now-restricted natural range of this tree is probably due(in large part)...to the (not-too-distant) extinction of these animals.



Pine, e. white *Pinus strobus*

Most historically-significant of all American trees.
In mid to late 1800's vast stands were cut to build a nation.
Tolerant of a variety of soil conditions, but thrives on well-drained soils in cool, humid climates.
Fast-growing and long-lived (500 years reported).
Tallest tree in E. North America (230 feet) and 7 feet d.b.h.

Foliage:

Deer, elk, moose and snowshoe hare.
Foliage has 5X the vitamin C as lemons.

Bark:

Porcupine, beaver, cottontail rabbit and snowshoe hare.

Seeds:

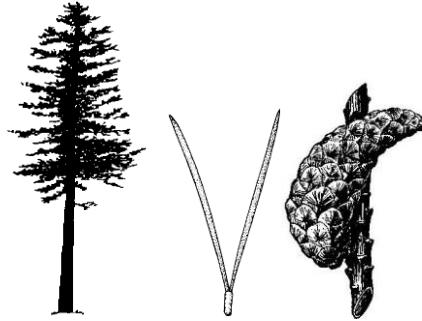
Chickadees, red crossbills (66% diet), goldfinch, pine siskin, pine warbler, grosbeaks, nuthatches, turkey, quail, squirrels, chipmunks and mice.

Shelter:

Deer often “yard” in pine stands during winter.
The primary nest-site choice for bald eagles.

Susceptible to many ailments.

White pine blister rust. 3% mortality today (was once much higher).



Pine, jack *Pinus banksiana*

Small, “scrubby-looking” conifer of dry, acidic, sandy and sterile soils.

Pioneer sp. who invades burns and exhausted sites (barrens).

Slow-growing and short-lived (approx. 60 years on poor soils in WI), but 250 yrs. has been recorded.

Capable of 90’ and 30” d.b.h.

Most northerly distribution of all N. American pines.

Prefers cool summers and cold winters.

Associates include sweet fern, bracken fern and blueberry.

Tightly sealed cones persist for 20 yrs.

Cones open readily with heat (fire) - releasing seeds.

Subject to “die-back” and insect problems during times of stress.

Seeds:

Red squirrel, chipmunks, white-footed mouse, goldfinch, grackles & robin.

Needles:

Ruffed and spruce grouse.

Seedlings and saplings (browse):

Deer, snowshoe hare and porcupine.

Bark:

Porcupine

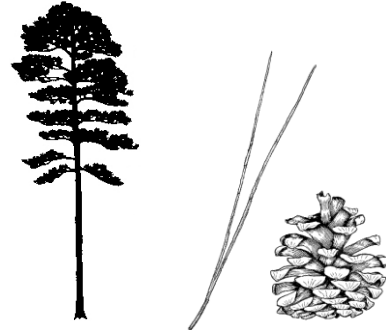
Nest site:

Nighthawks and Vesper sparrows (on ground) in openings.

Rare Kirtland’s warbler (on ground) in young stands.

Insect pests:

Pine tussock moth (tufted caterpillars), jack pine and red-headed pine sawfly (larvae), jack pine needle miner and jack pine budworm (both moth larva).



Pine, red (Norway) *Pinus resinosa*

Present day populations are descendants of a small band of ice age refugees, who survived glaciation in an Appalachian refuge, then migrated west and north into its present range. As a result, little genetic variation exists today.... these inbred trees are all pretty-much the same.

Usually found on dry sands in historically fire-prone areas.

Easy to cultivate and **suffers little from pests**.

Shade-intolerant.

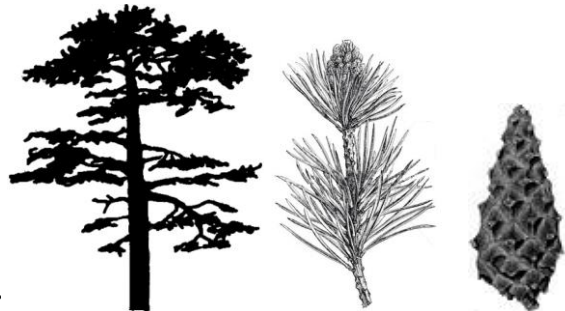
Capable of 150 feet, 60" d.b.h. and 400 years (expect 200).

Saplings & seedlings:

Deer and snowshoe hare.

Seeds:

Red squirrel, chipmunks, mice, red crossbill, pine grosbeak and pine siskin.



Pine, scotch *Pinus sylvestris*

Proper name is Scots Pine.

A medium to tall pine with bright orange upper trunk and branches.

60 - 90 feet and 2 feet d.b.h.

Capable of 700 years.

Imported from Europe in colonial times as a potential lumber source. Lacking the qualities of our native pines, the effort was abandoned. It now survives as a *naturalized relic* or occasional tree.

The most widely distributed pine in the world.

Seeds:

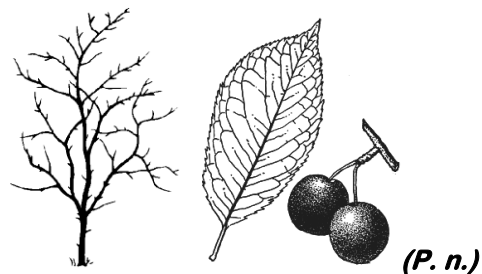
Red squirrel, mice and crossbills.

Buds and young shoots:

Pine grosbeak

Bark:

Porcupine



Plum, Canada *Prunus nigra*

Plum, American *Prunus Americana*

A common shrub or small, spiny tree of river valleys, roadsides and fencerows.

Capable of 6-25 feet and 8-12 inches d.b.h.

Grows quickly but doesn't live long.

Prefers full sunlight and well-drained silt loams.

Fruit (orange to red):

Deer, bear, raccoon, opossum, red and gray fox (chief customer), coyote, squirrels, bobcat and turkey.

Foliage:

Deer

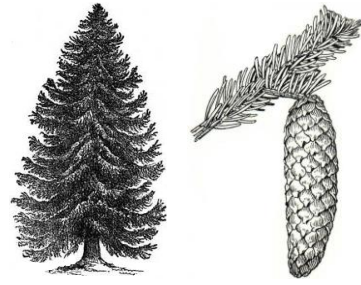
Shelter:

Plum thickets attract many animals as temporary shelter.

Lore:

Canada plum distribution may be attributed in-part to the deliberate planting by natives.

Don't plant potatoes near plum trees. The trees host aphids which will infest your plants.



Spruce, Norway *Picea abies*

Native to north & central Europe but now naturalized locally.
Thrives in deep, rich, moist soils and partial shade.
Grows fast to 200 feet in Europe (seldom over 130 feet here).
An impressive and attractive tree at maturity.

Seeds:

Red squirrel and white-footed mouse.

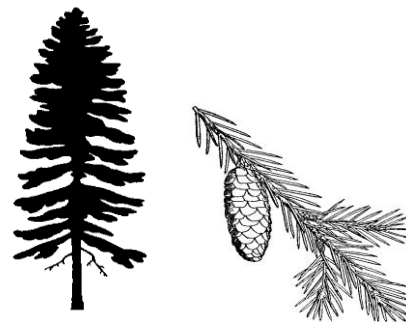
Nest site:

Northern raven, green heron, merlin and many songbirds.

Cover:

Deer, grouse and snowshoe hare.

Popular roost tree for owls and hawks.



Spruce, white *Picea glauca*

Capable of 140 feet and 5 feet d.b.h.
Tolerates a variety of soil conditions.
A valuable source of pulpwood in Canada.

Nest site:

A preferred choice for the raven.

Seeds:

Red squirrel, gray squirrel, ruffed grouse, boreal chickadee, red-breasted nuthatch, red and white-winged crossbills.

Needles:

Spruce grouse, snowshoe hare, deer, moose and porcupine (but not a *favorite* browse for deer or moose).

Bark:

Porcupine

Bears strip the bark for the sweet sapwood.

Lore:

Tough, pliable roots were used by Ojibwa to lace birch bark canoes.

Inner bark a nourishing emergency food.

Was a (staple) browse for American mastodon.



Spruce budworm and sawfly are the most serious pests.
Budworm outbreaks provide a temporary bonanza for woodpeckers, kinglets, thrushes, warblers, finches and crossbills.



Sumac, staghorn *Rhus typhina*

Sumac, smooth *Rhus glabra*

A small shrub-like “tree” of fields, roadsides & forest openings.

Spreads by seeds and sprouts from older stumps.

Foliage turns a brilliant crimson in the fall.

Bears multiple cone-shaped clusters of fruit (rather... seeds coated in a tart-flavored hairy coating), which may be an important winter food for *hard-pressed* animals.

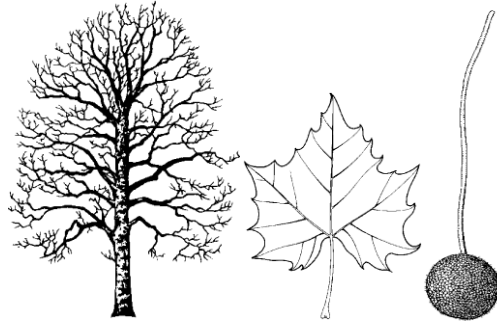
A sour, lemony beverage can be made from boiled fruits.

Fruit

Over 95 species of birds, including ruffed grouse, sharp-tailed grouse, turkey, pheasant, bobwhite quail, bluebird, cardinal, catbird, crow, purple finch, goldfinch, evening grosbeak, scarlet tanager, junco, mourning dove, robin, brown thrasher, woodpeckers, blue jay, chickadees, striped skunk, deer, chipmunks and mice.

Bark and twigs:

Cottontail rabbit, snowshoe hare, squirrels, moose, elk and deer.



Sycamore *Platanus occidentalis*

A magnificent tree of swamp borders and floodplains. While not the tallest, it is considered the most massive tree east of the Rockies.

Capable of 167 feet and 13 feet d.b.h..

Larger specimens were described in the late 1700's by President George Washington.

Southern Wisconsin is the northern range-limit.

Tolerates wet (poorly-drained) soils.

Fast-growing and long-lived. May reach 80 feet in 20 years!

Patchy, rigid-textured bark sloughs-off as the tree matures because it is not elastic-enough to expand with rapid growth.

Seeds:

Purple finch, goldfinch, junco, fox squirrel and mice.

Fruits:

A persistent head of multiple achenes (simple dry fruits).

Beaver, muskrat and squirrels.

Foliage:

Occasionally browsed by deer.

Nest site:

Older trees develop cavities suitable for owls, flycatchers, chimney swift, wood duck, mergansers, squirrels, raccoon and opossum.



Winterberry *Ilex verticillata*

A species of holly.

An erect, multi-stemmed shrub of sandy, acidic or clay-loam soils. 5-15 feet

Dense, slender, “zig-zag” branches form a spreading crown.

Shady, moist areas but does well in open, drier sites too.

Often forms thickets.

Scarlet red to orange ¼” fruits on gray stems.

Fruit:

Persists on plant through mid-winter.

Toxic to humans.

White-footed mouse, boreal red-backed vole, woodland jumping mouse, raccoon, 48 species of songbirds incl. catbird, brown thrasher, cedar waxwing and white-throated sparrow.

Berries are low in fat and used most-often in late winter when alternatives are scarce.

Foliage, buds and stems:

Host plant to larva of Henry’s elfin butterfly.

Browse (but not preferred) for moose, deer, cottontail rabbit and snowshoe hare.

Nectar:

Several insect species including honeybees.