

Keck Lab Walking Trail Plant Identification Guide

Fall 2003

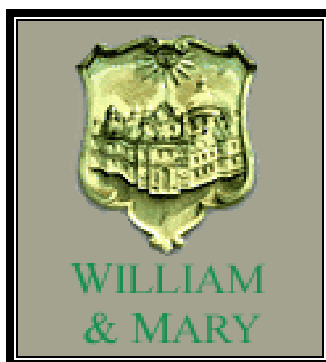


Compiled by:

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submitted in partial fulfillment for Coastal Botany (MS527)

Course Instructor:

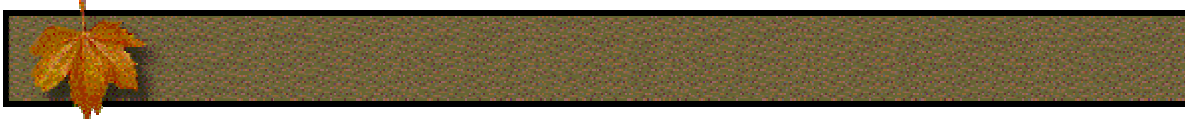
James E. Perry



VIRGINIA INSTITUTE of MARINE SCIENCE
VIMS

KECK LAB WALKING TRAIL

PLANT IDENTIFICATION GUIDE



This guide was created for use by students of The College of William and Mary for plant and tree identification along the Keck Lab's walking trail on the main campus. The guide provides a brief description and pictures of 53 plant species, representing 32 different families that are most likely to be seen along the trail. The species descriptions are intended to highlight the characteristics that are most helpful for identifying the plants in the field.

HOW TO USE

The guide is organized in the following manner:

- A **glossary** at the beginning of the guide to define key terms that are useful in plant and tree identification. Glossary definitions were taken from Grimm 1983.
- A **plant and tree anatomy** guide is provided to illustrate key characteristics of leaf shapes and plant and tree anatomy.
- **Plant families** are listed alphabetically by their Latin classification names. General family characteristics of the most important groups are given in paragraph form at the beginning of the family section.
- **Species** are listed alphabetically, by Latin name, within each separate family section.
- **Species descriptions** include information about the general **form** of the plant or tree, **leaf, flower, fruit, twig**, and **bark** characteristics, the general **habitat** in which the species occurs and information about **economic** and **wildlife value**.
 - **Photos** of various characteristics of the plant or tree are provided. Unless otherwise noted, all photos used in this guide have been reproduced from the Virginia Tech Forestry Department Dendrology website with permission from the authors (© 2003, Virginia Tech Forestry Department, all rights reserved – <http://www.cnr.vt.edu/dendro/dendrology/factsheets.cfm>). Additional photos were reproduced from websites that specifically authorize the use of the pictures for educational purposes and have been appropriately cited.
 - **Distribution** information is provided for all the plant and tree species. Maps are reproduced from either the Iowa State University Dendrology website with permission from the authors (© 1998-2000, Dr. Donald Farrar, Iowa State University, all rights reserved – <http://www.public.iastate.edu/~bot356/>.) or the USDA-NRCS Plants Database (<http://plants.usda.gov/plants>).
 - **Habitat profile** diagrams are provided for many of the plant species. These diagrams are reproduced from the Iowa State University Dendrology website (see above) and indicate where, along a moisture and slope gradient, the species occurs.
- An alphabetic listing of plants by genus and species.

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GLOSSARY

Acuminate: Long-tapering to a pointed apex.

Acute: Sharp pointed, applies to apex.

Alternate: Leaves, branches, buds, etc. which are scattered single along the stem or a node; not opposite.

Anther: The pollen-bearing portion of the stamen.

Appressed: Closely pressed against.

Axil: The angle found between any two organs or structures.

Bract: A reduced leaf, particularly one subtending a flower.

Bracteate: Having bracts.

Calyx: The usually green, outer whorl or series of whorls of the perianth.

Capsule: A dry, or occasionally leathery, dehiscent fruit developed from 2 or more carpels.

Carpel: One member of a compound pistil; a simple pistil.

Catkin: A scaly-bracted, usually flexuous spike or spike-like inflorescence of cymules.

Ciliate: With trichomes arranged on the edge of a flattened structures such as a leaf, petal or samara.

Claw: The narrow petiole-like base of some petals or sepals.

Compound: Composed of 2 or more similar and united parts, as in a compound pistil or leaf.

Connate: Similar structures joined as one body or organ.

Cordate: With a sinus and rounded lobes at the bases, usually ovate in general outline; often restricted to the base rather than to the outline of the entire organ; heart-shaped.

Corona: A crown-like extension of basal portions of perianth segments.

Crenate: Shallowly rounded-toothed or teeth obtuse; scalloped.

Crown: A corona.

Cuneate: Wedge-shaped; triangular, with the narrow end at point of attachment, as the bases of certain leaves or petals.

Cuspidate: Bearing a cusp or strong sharp point.

Cyme: A broad, flattish determinate inflorescence, the central flowers maturing first.

Deciduous: Not persistent or evergreen.

Dehiscent: The method or process of opening regularly of a fruit or anther, where by seeds or pollen, are shed; splitting open.

Dentate: Toothed, the sharp or coarse teeth perpendicular to the margin.

Diffuse: Loosely branching or spreading; of open growth.

Digitate: Having parts or segments diverging from a common point, as fingers from a hand.

Dilate: Widened or enlarged.

Dioecious: Having staminate and pistillate flowers on separate plants.

Drupe: A fleshy, usually 1-seeded indehiscent fruit with seed enclosed in a stony endocarp.

Elliptic: Being narrowed to relatively rounded ends and widest at or about the middle, 2 dimensional, essentially laminate.

Elongate: Much longer than broad.

Endocarp: Innermost layer of pericarp.

Endosperm: The food reserve outside the embryo within the seed.

Entire: A margin without teeth, lobes or divisions.

Fascicle: A bundle, or close cluster.

Fruit: A ripened ovary; the seed bearing portion of the plant.

Geniculate: Sharply or abruptly bent.

Glabrous: Without trichomes or hairs.

Glaucous: Whitened with a bloom, often lost on heating.

Herb: A vascular plant lacking a persistent woody stem.

Imperfect: Flower which contains only one set of sexual organs, either stamen or pistils.

Indehiscent: Not regularly opening, as a fruit or anther.

Inflorescence: The flowering section of a plant.

Involucre: A whorl or collection of bracts surrounding or subtending a flower cluster or a single flower.

Irregular: Without regularity; inequality in size or union of similar parts; not symmetrical.

Laciniate: Divided into long, narrow, more or less equal divisions or segments.

Lanceolate: Lance-shaped, much longer than wide, widened at or above the base and tapering to the apex.

Leaf: The green expansion born by the branches of trees.

Leaf bud: A bud which contains undeveloped leaves but not flowers.

Leaflet: A single unit or division of a compound leaf which will ultimately be separated from the leaf axis by an abscission layer.

Legume: A dry fruit from a single ovary usually dehiscent along 2 structures.

Lenticels: Cory spots on the surface of twigs, which sometimes persist on the bark of branches, to admit air into the interior.

Lobe: A more or less rounded division of an organ.

Lustrous: Glossy; shining.

Margin: The approximately outer 1/8 of the flattened portion of a blade.

Midrib: The central vein of a leaf.

Monoecious: With staminate and pistillate flowers on the same plant.

Nut: A hard-shelled, 1-seeded, indehiscent fruit.

Nutlet: A diminutive nut.

Oblique: Slanted, or with unequal sides.

Oblong: Longer than broad and of fairly uniform diameter.

Obovate: Egg-shaped, with the broadest portion above the middle.

Obovoid: An egg-shaped solid, with the broadest part above the middle.

Opposite: Leaves, branches, buds, etc. which occur on opposite sides of the stem or a node.

Ovate: Egg-shaped, with the broadest part below the middle.

Ovoid: An Egg-shaped solid, with the broadest part below the middle.

Ovule: The part of the flower which, after fertilization, becomes the seed.

Palmate: Radiately lobed or compounded; also applies to leaf venation where the primary veins radiate from the summit of the petiole.

Panicle: A loose, irregularly compounded inflorescence of pedicelled flowers.

Pedicle: The stalk of either a solitary flower or of an inflorescence.

Peduncle: The stalk of a single flower in a inflorescence.

Perfect: Flower which contain both sexual organs, or both stamens and pistils.

Petal: One division of the corolla.

Petiole: The stalk of the leaf.

Pinnate: leaflets or pinnae of a compound leaf placed on either side of the rachis; feathr like.

Pinnately compound: A compound leaf in which the leaflets are arranged along a common rachis.

Pistil: The female sexual organ of flowers

Pistillate: Flowers which have one or more pistils but no stamen.

Pith: The softer central portion of a twig or stem.

Raceme: A simple inflorescence in which the flowers are arranged along an elongated axis or stalk.

Rachis: The extension of the petiole of a compound leaf corresponding to the midrib; the central axis of an inflorescence such as a spike or a raceme.

Revoluted: Turned or rolled backwards.

Samara: An indehiscent, 1-seeded, winged fruit.

Sepal: One of the division of the calyx.

Serrate: Toothed, with sharp teeth pointing forward like those of a saw.

Sessile: Without a stalk.

Shrub: A low woody plant which commonly divides close to the ground into many stems.

Simple: Consisting of one piece; leaves in which the blades is in one piece, not compound.

Sinus: The cleft or space between two lobes.

Spike: A simple inflorescence of sessile flowers arranged on a common and elongated stalk or axis.

Stamen: The male sexual organ of flowers.

Staminate: Flowers which contain only stamens.

Stipule: A leaf-like appendage which occurs at the base of the petiole of a leaf.

Stipule-scar: The scar left on a twig by the fall of a stipule.

Style: A portion of the pistil which connects the stigma and ovary.

Terminal bud: A bud which is formed at the tip of a twig or branchlet.

Tomentum: Densely matted or wooly hairs.

Toothed: Provided with teeth or small projections.

Truncate: Appearing as if cut-off; square.

Trunk: The main stem of a tree.

Twig: A young shoot; a term generally applied to the growth of the past season.

Umbel: A simple inflorescence in which the flower radiates from the same point.

Undulate: With a wavy margin.

Whorl: An arrangement of three or more leaves or branches in a circle about a common axis.

Wing: A thin, flat appendage.

Woolly: Covered with tangled or matted hairs.

ACERACEAE

(Maple family)

Red maple Aceraceae *Acer rubrum*

Form: Shrub or medium to large tree

Leaf: Simple, coarse toothed with 3-5 shallow lobes, opposite, 1.5 dm long, 1.8 dm wide

Flower: Small red flowers in clusters about 1-3 mm long;

Fruit: Samara wings are red

Twig: Reddish colored with buds

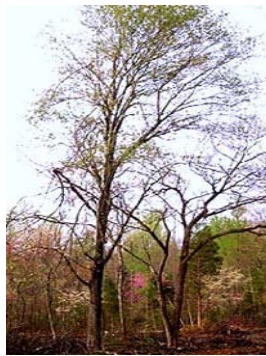
Bark: Smooth gray when young, broken and darker when older

Habitat: Most soils, adapted to wet sites

Economic value: Riparian buffers, ornamentals

Wildlife value: Food for squirrels and birds.

FORM:



LEAF:



TWIG:



BARK:



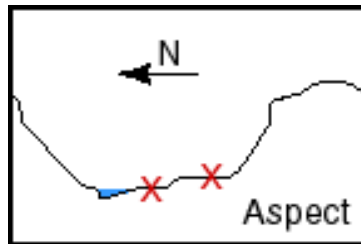
FRUIT:



DISTRIBUTION:



HABITAT PROFILE:



ANACARDIACEAE

(Cashew or sumac family)

Poison Ivy Anacardiaceae *Toxicodendron radicans*

Form: Most often climbing vine

Leaf: 3 thin, ovate to elliptic pinnately compound 5-20 cm long, 2 –12 cm wide, serrated, often shiny on top

Flower: Small and yellow in clusters

Twig and Bark: Thin, and may have numerous adventitious roots

Habitat: Woodlands, meadows, many different habitats, nearly everywhere

Economic value: None

Wildlife value: None

FORM AND LEAVES: TWIG:



FRUIT:



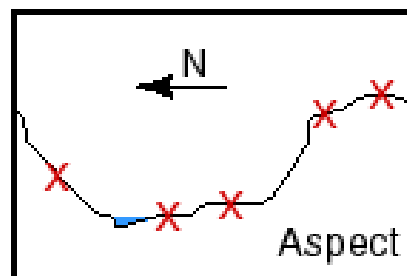
ROOTS:



DISTRIBUTION:



HABITAT PROFILE:



AQUIFOLIACEAE

(Holly family)

American holly Aquifoliaceae *Ilex opaca*

Form: Small tree, grows in pyramid shape about 15-30 ft.

Leaf: Stiff, leathery with large spiny teeth, alternate, simple

Flower: Small greenish-white, male on cymes, female are solitary

Fruit: Berry is usually bright red about ¼ inch

Twig: Thin

Bark: Light gray to gray brown, bumps

Habitat: mixed deciduous woods

Economic value: Landscaping, also often used in Christmas holiday decorations

Wildlife value: Berries eaten by deer and birds, foliage gives cover and nesting habitat for birds

LEAVES:



FRUIT:



FLOWER:



FORM:



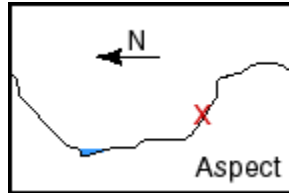
BARK:



DISTRIBUTION:



HABITAT PROFILE:



ASPIDIACEAE

New York fern Aspidaceae *Thelypteris noveboracensis*

Form: Rhizomatous herb, 1.5 ft height, erect shape

Leaf: yellow-green, 20-60 cm long short spaces near apex of rhizome, blades lanceolate and 2-pinnatifid

Flower: Sori small on under part of leaf

Habitat: Woods, thickets and swamps, most soils, medium drought tolerance

Economic value: Landscape, None

Wildlife value: Low palatability for animals, None

FORM:

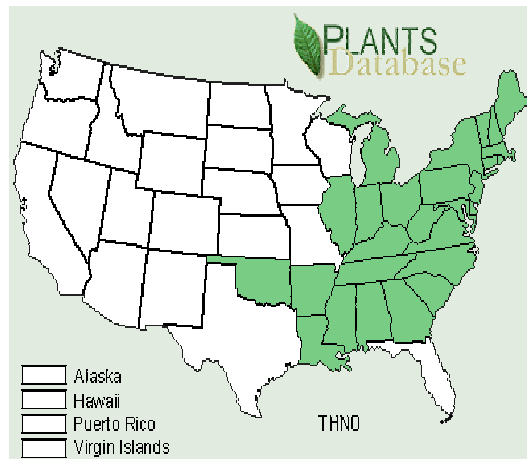


J.S. Peterson @ USDA-NRCS PLANTS Database

LEAF AND SORI:



DISTRIBUTION:



USDA-NRCS PLANTS Database / Britton, N.L.,
and A. Brown. 1913. *Illustrated flora of the northern
states and Canada*. Vol. 1: 18.

Christmas fern Aspidaceae *Polystichum acrosticoides*

Form: Rhizomatous herb, erect

Leaf: numerous leaves, dark green evergreen, blades lanceolate, 1-pinnate

Flower: Sori on under part of leaf are rounded and in 2 rows

Habitat: Shaded forests

Economic value: Landscape, None

Wildlife value: Low palatability for animals, None

FORM:



J.S. Peterson @ USDA-NRCS PLANTS Database.

SORI:

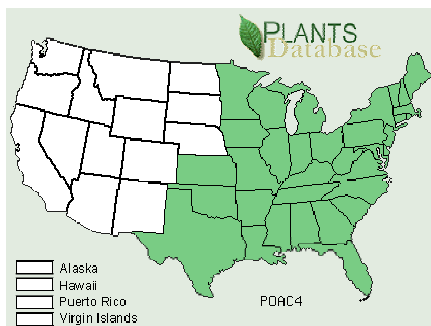


YOUNG PLANTS:



Dan Tenaglia - www.missouriplants.com

DISTRIBUTION:



Sensitive fern Aspidaceae *Onoclea sensibilis*

Form: Rhizome is long, creeping and branching

Leaf: Dimorphic, naked petioles, widely winged rachis

Flower: Sori on under part of leaf are rounded and in 2 rows

Habitat: Shaded slopes, woods and swamp edges

Economic value: : Landscape, None

Wildlife value: Low palatability for animals, None

LEAF:



FORM AND SORI:

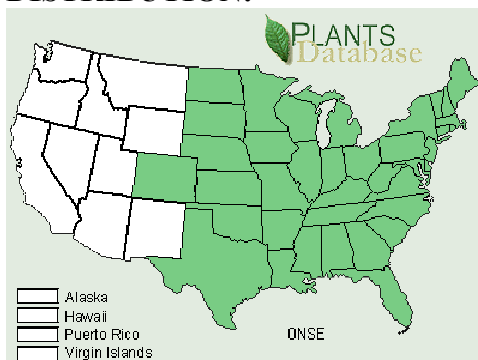


Robert H. Mohlenbrock @ USDA-NRCS PLANTS

USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *Illustrated flora of the northern states and Canada*. Vol. 1: 11.

Database/ USDA SCS. 1991. *Southern wetland flora: Field office guide to plant species*. South National Technical Center, Fort Worth, TX.

DISTRIBUTION:



ASTERACEAE

(Aster, sunflower or composite family)

Solidago Asteraceae *Solidago erecta*

Form: Herbaceous, erect stem, short rhizomes, about 8-10 dm height

Leaf: often basal, elliptic 5-15 cm long, ciliate, smooth on both sides

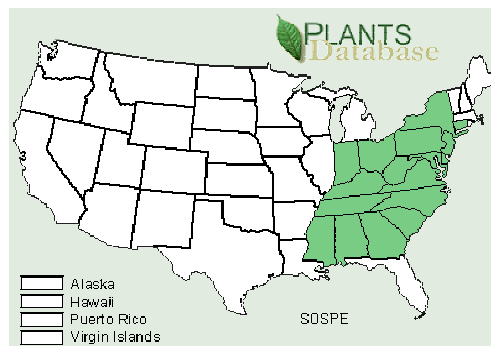
Flower: Heads with 12- 25 flowers, ray flowers yellow

Habitat: Woodlands, thickets, old fields

Economic value: None

Wildlife value: None

FORM, LEAF AND FLOWERS: **DISTRIBUTION:**



USDA-NRCS PLANTS Database / **Britton, N.L., and A.**

Brown. 1913. *Illustrated flora of the northern states and*

***Canada*. Vol. 3: 384.**

BETULACEAE

(Birch or hazel family)

Ironwood Betulaceae *Carpinus caroliniana*

Form: large shrub or small tree

Leaf: deciduous, alternate, egg shaped to elliptical, dark green turns yellow, orange, or red in the fall

Flower: male catkins 1-2 inches, female flowers paired shorter

Fruit: Nutlets with three winged bract

Twig: Slender, dark brown

Bark: Gray thin, usually smooth (resembles a flexed muscle)

Habitat: Deep fertile moist soil, partial shade, understory species, in bottomland mixed hardwood forests, often near transition between mesic and wet areas

Economic value: Minor importance, used in small hard wooden objects, specialty items

Wildlife value: Birds, fox, squirrels eat seeds, buds and catkins, wood used by beavers
In beaver habitat

FORM:



TWIG:



LEAF:



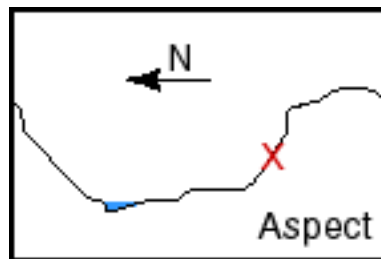
BARK:



DISTRIBUTION:



HABITAT PROFILE:



Tag alder Betulaceae *Alnus serrulata*

Form: Thick shrub or small tree with dark green foliage, flexible stems, fibrous root system, densely branched, multiple trunks

Leaf: dark green, fine toothed, simple, egg-shaped, smooth above, hairy below, deciduous

Flower: Male (longer) and female (cone-like) on same tree, seeds produced in small cones

Twig: grayish-brown with lenticels

Bark: dark gray with lenticels, smooth

Habitat: wet bottomlands and stream margins

Economic value: used in streambank stabilization and wetland restoration

Wildlife value: woodcock habitat

FORM:



LEAF:



TWIG:



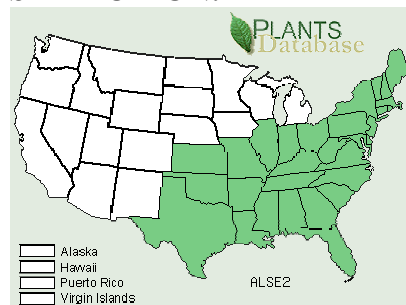
CONES:



BARK:



DISTRIBUTION:



BLECHNACEAE

Virginia chain fern Blechnaceae *Woodwardia virginica*

Form: Rhizomes, red-brown scales, erect, petioles same length as blade

Leaf: blades 3-8 dm long 1-pinnate, scaly along mid-rib

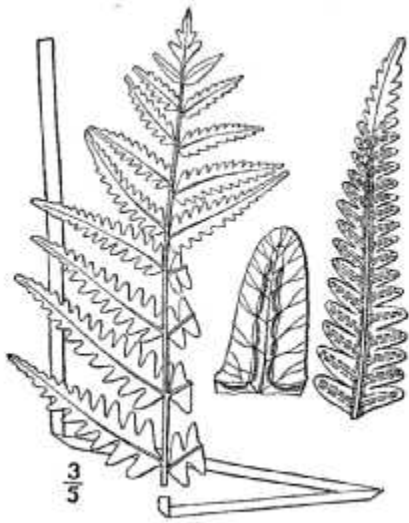
Flower: Sori linear, along midrib under leaf

Habitat: acidic soils, wet areas, wet pinelands

Economic value: little

Wildlife value: little

LEAF AND SORI:



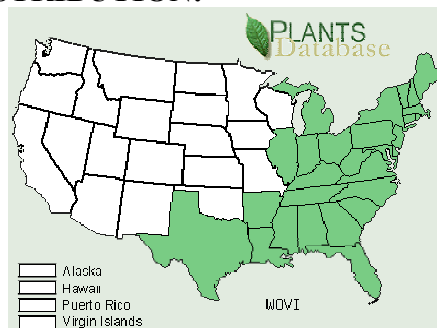
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown.
1913. *Illustrated flora of the northern states and Canada*. Vol. 1: 24.

LEAF:



Robert H. Mohlenbrock @ USDA-NRCS PLANTS
Database / USDA SCS. 1991. *Southern wetland flora:
Field office guide to plant species*. South National
Technical Center, Fort Worth, TX.

DISTRIBUTION:



CAPRIFOLIACEAE

(Honeysuckle family)

Japanese honeysuckle *Lonicera japonica*

Form: Perennial vine, no tendrils or aerial roots

Leaf: Opposite and simple, can be oval shaped, evergreen, light green,

Flower: Very fragrant, white, pale yellow, very long and thin, seeds black and shiny

Twig: thin and light brown

Bark: peeling

Habitat: woodlands, roadsides

Economic value: landscape uses

Wildlife value: non-native species, can be a problem for native species

LEAF:



FLOWER:



FRUIT:



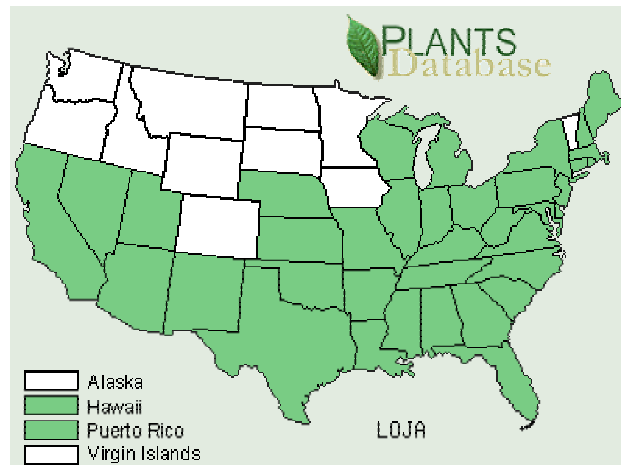
BARK:



FORM:



DISTRIBUTION:



CORNACEAE

(Dogwood family)

Flowering dogwood Cornaceae *Cornus florida*

Form: small bushy tree, flattened appearance

Leaf: opposite, about 3-6 in long, simple, oval shaped

Flower: large showy bracts surround clusters of inconspicuous flowers, fruit is red colored drupe

Twig: thin, green to gray in color

Bark: deeply ridged, broken bark

Habitat: rich well drained soils, mid-low slopes, understory species with other hardwoods

Economic value: ornamental value, used around homes and offices because of bloom

Wildlife value: fruit eaten by gray and fox squirrels, and some birds, leaves and twigs often eaten by white-tailed deer

FORM:



LEAF:



TWIG:



FLOWER:



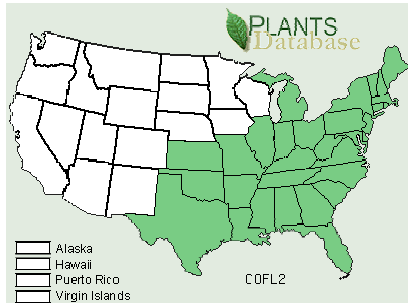
FRUIT:



BARK:



DISTRIBUTION:



Dogwood Cornaceae *Cornus stricta*

Form: Deciduous small tree or large shrub, multiple trunks

Leaf: Opposite and oval shaped with smooth margins

Flower: Creamy white loose and small, occur in clusters without showy bracts, fruits are drupes

Bark: Thick smooth, furrowed

Habitat: Wet habitats, along streams

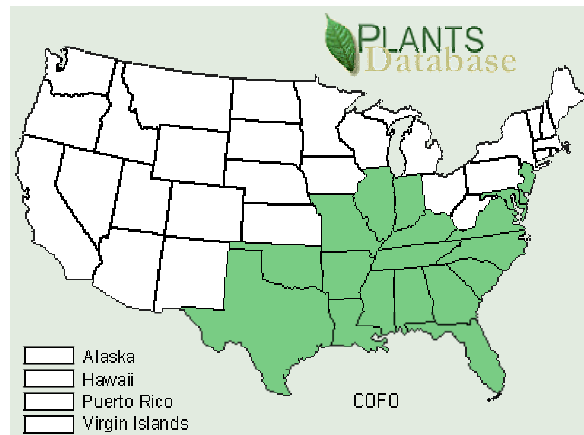
Economic value: Landscape, ornamental

Wildlife value: Fruits eaten by many different birds, including quail and robins

LEAF, FLOWER AND FRUIT:



DISTRIBUTION:



USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown.

1913. *Illustrated flora of the northern states and Canada*. Vol. 2: 663.

CUPRESSACEAE

Red cedar Cupressaceae *Juniperus virginiana*

Form: small evergreen, pyramid shape,

Leaf: two types of leaves can be on same tree, scale leaves and awl leaves (pointed)

Flower: small, cone like on end of short twigs, male (yellowish) and female on different plants, fruit pale blue berries

Twig: slender, covered by scales

Bark: reddish brown, thin, shreddy

Habitat: wide distribution, many soils, best on dry soils

Economic value: landscaping, blocking wind

Wildlife value: food and cover for some birds and mammals

FORM:



AWL LEAVES:



SCALE LEAVES:



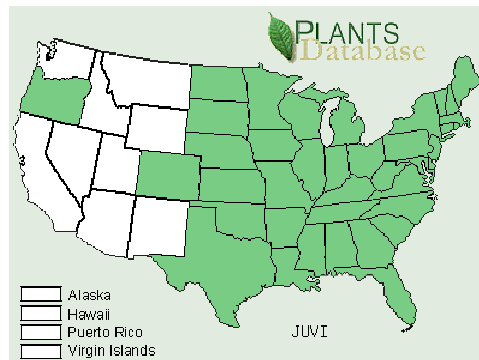
FRUIT:



BARK:



DISTRIBUTION:



DIOSCOREACEAE

(Yam Family)

Wild yam Dioscoreaceae *Dioscorea villosa*

Form: herbaceous perennial vine, rhizomatous, tuberous

Leaf: simple, entire, heart-shaped, alternate

Flower: small white or green flowers on short spikes

Stem: smooth

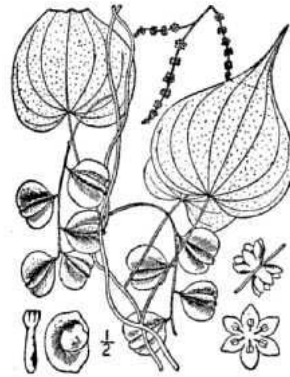
Habitat: tidal freshwater marshes, forested wetlands, woodlands

LEAVES:



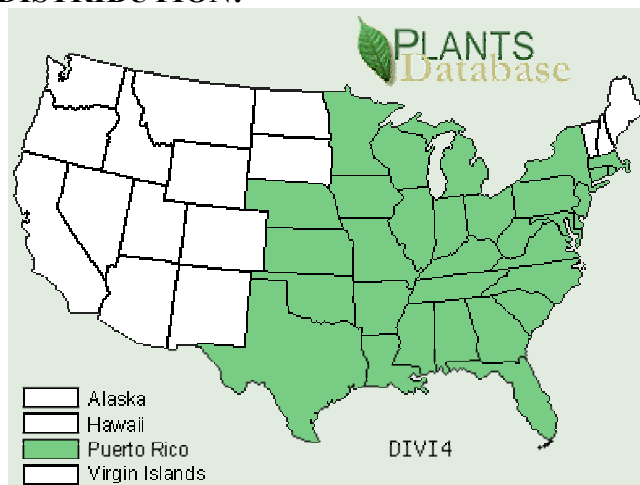
Thomas G. Barnes @ USDA-NRCS PLANTS Database / Barnes, T.G. & S.W. Francis. 2004. *Wildflowers and ferns of Kentucky*. University Press of Kentucky.

LEAVES, FLOWER AND FRUIT:



USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *Illustrated flora of the northern states and Canada*. Vol. 1: 535.

DISTRIBUTION:



EBENACEAE

(Ebony family)

Persimmon Ebenaceae *Diospyros virginiana*

Form: small to medium sized tree, about 5-12 meters

Leaf: deciduous, simple, alternate, ovate to elliptical, oblong with smooth edges

Flower: either male or female (on separate trees) female bell shaped and creamy yellow or yellow green and fragrant, male tubular long greenish yellow, fruit orange fleshy with seeds

Twig: slender, brownish-gray with triangular buds

Bark: thick, blocky, gray

Habitat: wide range of conditions, but best on terraces of large streams and river bottoms

Economic value: Ornamental, fruit, used in specialty items

Wildlife value: leaves eaten by white-tailed deer, fruit eaten by some mammals and Birds

FORM:



LEAVES:



TWIG:



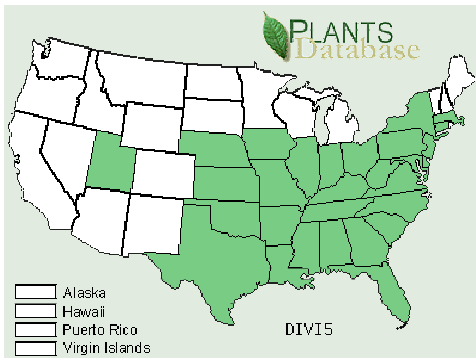
FRUIT:



BARK:



DISTRIBUTION:



ERICACEAE

(Heath Family)

Species in the Ericaceae family are mostly shrubs or herbs comprising about 125 genera and 3,500 species. The leaves are alternate, simple, simple or sometimes opposite or whorled and can be entire or toothed. The stipules are absent in most if not all of the species. The flowers are perfect bisexual with radial symmetry or sometimes slightly slit in half. The perianth is in two whorls, a 4 to 5 parted calyx of usually joined together as one sepals, and a 4 to 5 petal corolla, usually joined together as one. The anthers open through pores and pollen is usually released in tetrads. The fruit is a capsule or berry.



Sourwood Ericaceae *Oxydendrum arboreum*

Form: Medium to large tree 40 to 60 feet tall, with hairless branches.

Leaf: Deciduous. Alternate, simple, 4 to 7 inches long. Serrated margins at least towards the apex with very slight birstle-like hairs on the mid-vein below, elliptical to lanceolate in shape. Green to red in color. Sour to the taste when chewed.

Flower: Small ¼ inch long, white in color, erect on drooping panicles.

Fruit: Five-valved capsules borne on panicles. Capsules are dry when mature and release the tiny, two-winged seeds.

Twig: Olive green in color and then changes to red, with small, oppressed buds. Leaf scars are elevated with one bundle scar.

Bark: Grayish brown, very thick with deep furrows and scaly ridges. Ridges look similar rectangular blocks.

Habitat: Wooded slopes, stream banks and other well-drained areas.

Economic value: Used as a nursery stock product.

Wildlife value: Provides habitat for wildlife.

Form:



Leaf:



Twig /bud:



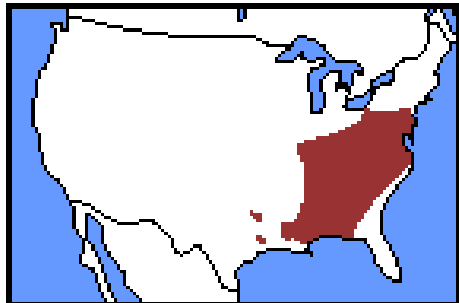
Bark:



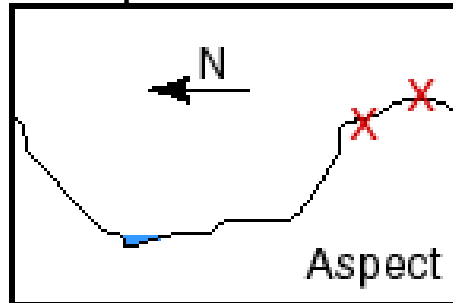
Flower:



Distribution:



Habitat profile:



High bush blueberry *Ericaceae Vaccinium corybosum*

Form: Shrub, erect, 3 to 15 feet tall with one or several trunks from the base.

Leaf: Alternate Simple, 1 ½ to 3 inches long, entire margins, elliptic to elliptic-lanceolate in shape, outlines is acute with cunneate base, dark green in color.

Flower: Bell-shaped, small calyx lobes are triangular to ovate, corolla is white in color, racemes terminal and bracts that fall off prematurely.

Fruit: Small berries five to ten mm in diameter, juicy and whitened with a bloom.

Twig: Slender, in a zigzag pattern, red and green in color, hairless.

Bark: Gray to brown; shreddy.

Habitat: Bogs, pocosines, pine barrens and rarely upland woods.

Economic value: Berries are edible and used to make a variety of products.

Wildlife value: Berries are eaten by various wildlife.

Leaf:



Twig w/buds:



Flower:



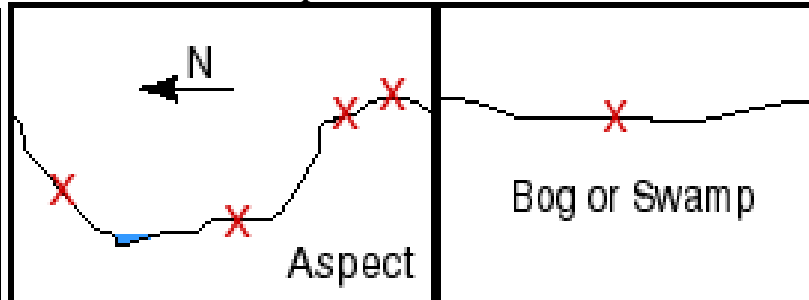
Bark:



Distribution:



Habitat profile:



Low bush blueberry *Ericaceae Vaccinium pallidum*

Form: Small shrub, 2 feet tall.

Leaf: Alternate, simple, 1 to 2 inches long, finely serrated margins, elliptic in shape, base tends to be cuneate with the apex being acute or acuminate, dark green in color; petioles if present are short with bristle-like hairs.

Flower: Bell-shaped Small, approximately four to six mm long with a five lobed calyx and corolla green and pink in color and eight to ten stamens.

Fruit: Small berries five to eight mm in diameter, dark blue to black in color, almost spherical.

Twig: Light to dark brown, young pubescent, hairless with age in zigzag pattern.

Bark: Smooth, green to red with most green near the base.

Habitat: Rocky hillsides and sometime roadsides.

Economic value: Berries are edible and used to make a variety of products.

Wildlife value: Berries are eaten by various wildlife.

Form:

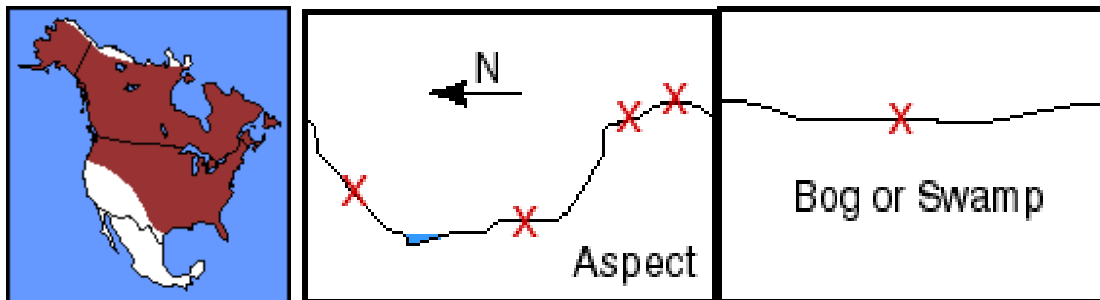
Leaf w/fruit:

Twig w/bud: Flower:



Distribution:

Habitat profile:



FABACEAE (Heath Family)

Redbud/Judas tree Fabaceae *Cersis canadensis*

Form: Large shrub or small 15 to 30 feet tall, unarmed with a short, often twisted trunk and spreading branches.

Leaf: Deciduous. Alternate, simple, palmately veined, 3 to 5 inches long, heart-shaped, green to reddish in color.

Flower: Showy, light to dark pink in color, approximately ½ of an inch long, clawed, in clusters of two to six.

Fruit: Fruits are flattened legumes, dry, brown, pea-like pods, usually 2 to 4 inches long that contain flat, elliptical, brown seeds ¼ inch long.

Twig: Slender and zigzag, almost black in color, spotted with lighter almost white looking lenticels. Winter buds are tiny, rounded and dark red to chestnut in color.

Bark: Smooth, in older trees bark becomes scaly with ridges and tends to be dark in color.

Habitat: Grows in hardwood forest like red and white oaks throughout the southeastern United States.

Economic value: Used in landscaping as an ornamental tree.

Wildlife value: Provides habitat and food for a variety of wildlife.

Form:



Leaf:



Twig: Bark:



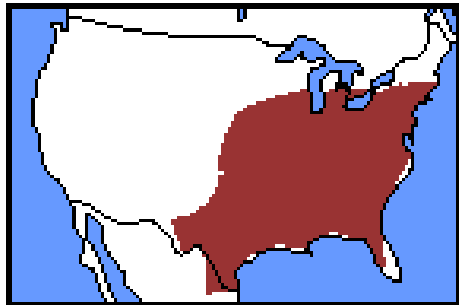
Fruit:



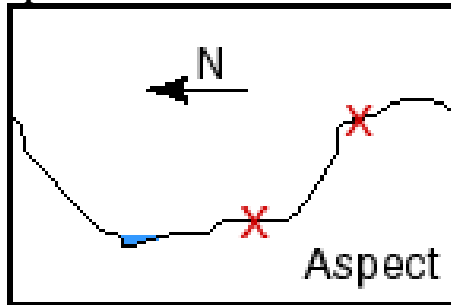
Flower:



Distribution:



Habitat profile:



FAGACEAE

(Beech Family)

Species in the Fagaceae family are monoecious trees or shrubs that comprise 6 to 8 different genera and approximately 800 species. The leaves are deciduous, simple, alternate, entire or lobed, cleft or parted; the stipules fall off prematurely. The fruit is called an acorn. It is a one-seeded nut that is partially enclosed. Most of the species are of economic importance and used for a variety of wood products as well as the tannin from the bark for leather tanning.



American Beech *Fagaceae Fagus grandifolia*

Form: Medium-sized to large sized tree, 60 to 75 feet tall with rounded crown.

Leaf: Deciduous. Alternate, simple, 2 ½ to 5 ½ inches long, toothed margins, elliptic or oblong-ovate or oval with tapered tip with a wedged or rounded base, pinnately-veined with each vein ending in a tooth. Leaves dry and papery to the touch.

Flower: Monoecious. Male flowers in spherical drooping heads on slender peduncles, female flowers in pairs on stout peduncles ½ to 1 inch long,

Fruit: Nuts are 3-sided, surrounded by bracts that form a 4-valved woody husk covered with spines bend backwards.

Twig: Very slender, in a zigzag pattern, light brown in color. Terminal buds approximate ¾ inch long and slender, light brown in color with overlapping scales.

Bark: Smooth, thin gray bark sometimes with darker mottling.

Habitat: Grows in rich, damp woods throughout the southeastern United States.

Economic value: Produces a moderate quality lumber used for flooring, cooperage, furniture, woodenware, and veneer. Also used as firewood. Creosote made from beech wood is used internally and externally as a medicine for various human and animal disorders.

Wildlife value: Provides habitat and its nuts are edible and provide food for a variety of wildlife.

Form:



Leaf:



Pith:



Bud:



Bark:



Fruit:

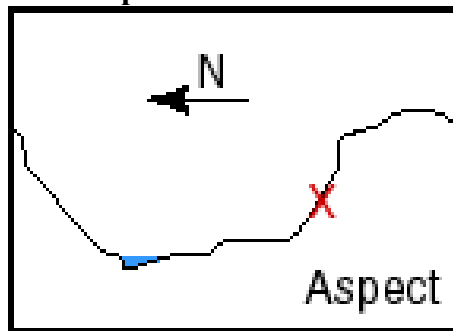


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Distribution:



Habitat profile:



Chestnut Fagaceae *Castanea dentata*

Form: Once a large tree, 100 or more feet tall with trunk four to eight feet in diameter. Now seen 15 to 20 feet due to blight.

Leaf: Deciduous. Alternate, simple, 5 to 8 inches long, margins sharply serrated with each serration bearing a bristle tip, pinnately veined, oblong to lanceolate in shape with pointed bases and long pointed tips, dull yellow in color and thin but firm in texture. Both sides are hairless.

Flower: Monoecious. Many small, white male flowers found on catkins, 6 to 8 inches long. Flowers borne on $\frac{1}{2}$ to $\frac{3}{4}$ inches long. Flowers appear April to May in the south, June in the north.

Fruit: Nut is two or three-seeded and is flat on one side and lustrous brown and pale downy toward the top. Nuts are enclosed in a round prickly bur 2 to 3 inches in diameter.

Twig: Smooth, moderately stout, hairless, greenish-brown to reddish-brown in color, with $\frac{1}{4}$ of an inch long, chestnut-brown buds covered with two or three scales, leaf scars are semicircular with cross-section of pith being star-shaped.

Bark: On young trees trunk is light brownish and smooth, on older trunks it is dark brown with shallow fissures and broad, long, flat topped and oblique ridges. Now often blight infested and seen with split bark, with orange fungal growth.

Habitat: Grows in a range of habitats but is found predominantly in bottomland forests.

Economic value: Used for post and poles, railroad ties, interior finishes, and cheap furniture.

Bark was formerly used in tanneries. Nuts are edible and popular around Christmas.

Wildlife value: Provides habitat and nuts provide food for a variety of wildlife.

Form:



Leaf:



Twig:



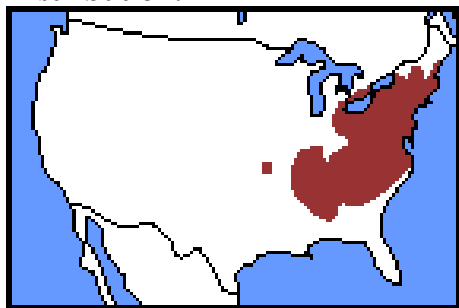
Bark:



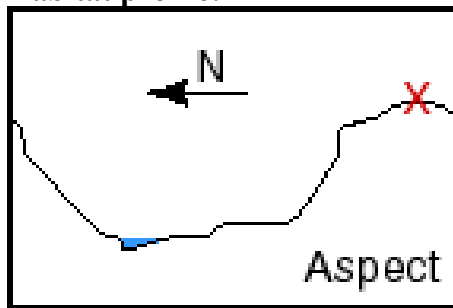
Fruit:



Distribution:



Habitat profile:



White oak *Fagaceae Quercus alba*

Form: A large tree; 60 to 80 feet tall when open grown with a trunk diameter of 1 to 2 feet. It has rugged, irregular crowns that are wide spreading with massive branches, with a stocky bole.

Leaf: Deciduous. Alternate, simple, 5 to 9 inches long and half as broad, pinnately veined with an evenly lobed margin, oblong to ovate in shape. Some leaves have shallow sinuses and broad lobes while others have deep sinuses and long narrow lobes. The tips are rounded and the base is wedge-shaped. Leaves are smooth, hairless, bright green above and whitish beneath.

Flower: Monoecious. Male flowers are green, borne in naked catkins, 2 to 4 inches long. Female flowers are reddish and appear as single spikes. Appearing with the leaves.

Fruit: Acorn, ovoid to oblong in shape, light brown in color, and short stalked. Acorn matures in one growing season with a warty cap that covers $\frac{1}{4}$ of the fruit. Seeds are shiny and are $\frac{3}{4}$ of an inch long. The cap of the acorn detaches at maturity.

Twig: Moderately stout, red-green to purplish gray in color, smooth, hairless, with terminal buds red-brown multiple in color that are small, rounded and hairless. Twigs are often shiny or have a polished appearance.

Bark: Whitish or light ashy gray in color, and is varying from scaly to irregularly platy or blocky. Sometimes have shallow fissures with long, irregular scales making the bark appear flaky.

Habitat: Grows in a range of habitats but is found predominantly in bottomland and dry ridge-like areas.

Economic value: Produces a high quality all-purpose wood used for tight cooperage, fine furniture, hardwood flooring, ship building, railroad ties, post. The white oak has acorn, which can be ground into flour for bread-making. It is also used as firewood.

Wildlife value: Provides habitat and acorns provide food for a variety of wildlife.

Form: **Leaf:** **Twig:** **Pith:** **Bark:** **Fruit:**

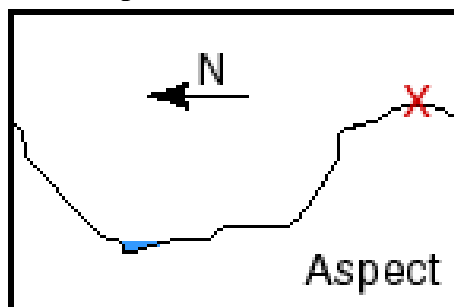


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Distribution:



Habitat profile:



Scarlet oak *Fagaceae Quercus coccinea*

Form: Medium to large-sized tree approximately 60 to 80 feet tall with irregular crown, and the butt-swell being noticeable.

Leaf: Deciduous. Alternate, simple, 3 to 7 inches long, ovate to elliptic in shape with deep wide sinuses and bristle-tipped lobes, bright green in color and lustrous on both sides.

Flower: Monoecious. Male flowers borne on catkins. Female flowers borne on spikes.

Fruit: Acorns are ½ to 1 inch long, deep top-shaped, with lustrous brown cups that cover

Twig: Smooth, slender, reddish-brown to grayish brown in color, with many terminal buds.

Bark: Trunk gray to brown, inner bark reddish, and on older trees, ridges develop very low on the trunk.

Habitat: Grows in dry sandy, poor soil in the mountain and piedmont regions throughout the southeastern United States.

Economic value: Produces a good quality lumber but less than the red oak. Used for landscaping as an ornamental tree to provide shade and is also used as street trees.

Wildlife value: Provides habitat and its fruit provides food for a variety of wildlife.

Form:



Leaf:



Twig:



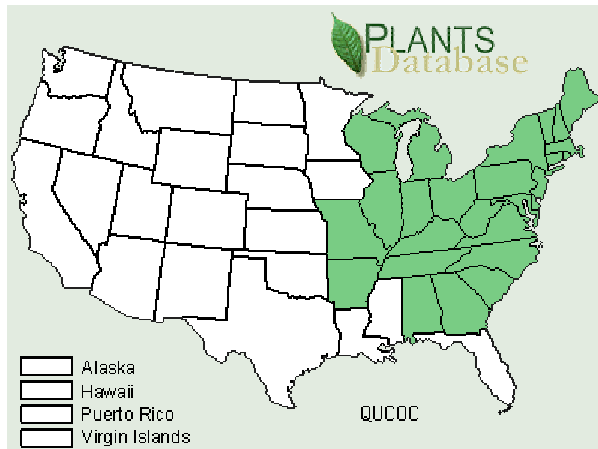
Bark:



Fruit:



Distribution:



Southern red oak *Fagaceae Quercus falcata*

Form: Medium to large sized tree approximately 60 to 80 feet tall, broadly rounded crown with massive branches.

Leaf: Deciduous. Alternate, simple, 5 to 7 inches long, ovate to obovate in shape, having 3 to 5 irregular lobes bristle-tipped, with the middle lobe being longer than the rest. Leaf sometime resembles that of a turkey's foot.

Flower: Monoecious. Male flowers borne on catkins. Female flowers borne on spikes. Appearing with the leaves.

Fruit: Acorns are $\frac{1}{2}$ long on a short stalk, the cup being saucer-shaped and slightly downy that covers only a $\frac{1}{3}$ of the nut.

Twig: Stout, young tree brownish gray and older tree tend to turn reddish in color with many terminal buds.

Bark: On younger trees smooth and dark brownish-red to gray in color and on older trees it tends to become dark and almost black.

Habitat: Grows in dry woods in the piedmont regions throughout the southeastern United States.

Economic value: Produces a good quality lumber used in cheap construction and for fuel or used in landscaping. The tannic acid can also be removed from the tree bark and used in a variety of products.

Wildlife value: Provides habitat and food for a variety of wildlife.

Form:



Leaf:



Twig:



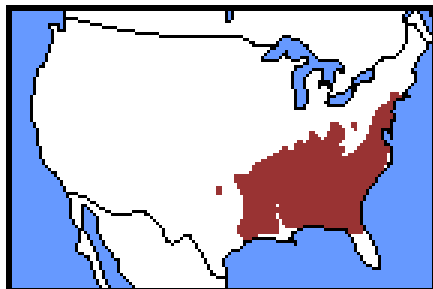
Bark:



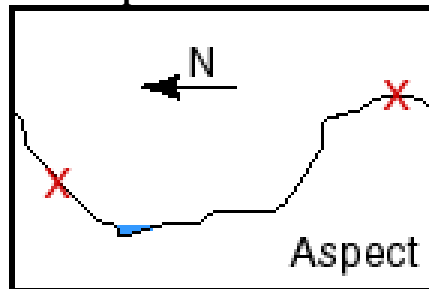
Fruit:



Distribution:



Habitat profile:



Swamp chestnut oak *Fagaceae Quercus michauxii*

Form: Medium to large sized tree approximately 60 to 80 feet tall, with a narrow crown.

Leaf: Deciduous. Alternate, simple, 5 to 8 inches long, wavy blunt-toothed margins, and obovate in shape.

Flower: Monoecious. Male flowers borne on long catkins and yellowish-green in color. Female flowers are small in leaf axils and green in color. Appearing with the leaves.

Fruit: Acorns are ½ inch long, chestnut brown in color, bowl shaped and 1/3 covered by a rough scaly cap.

Twig: Stout, smooth, reddish to orange brown in color with many terminal buds.

Bark: Older trunk light gray and deeply furrowed, scaly.

Habitat: Grows in low ground areas throughout the southeastern United States.

Economic value: Produces a moderate quality lumber used for construction, railroad ties, posts, and as fuel. The bark provides high quality tannic acid used in tanning leather.

Wildlife value: Provides habitat and food for a variety of wildlife.

Form:



Leaf:



Twig:



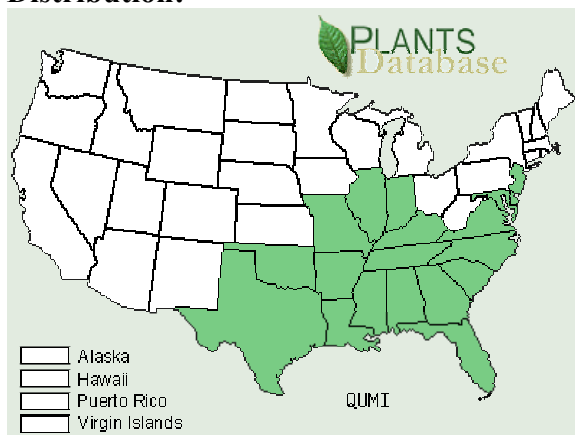
Bark:



Fruit:



Distribution:



Chinquapin oak *Fagaceae Quercus muehlenbergii*

Form: Medium-sized tree approximately 40 to 50 feet tall with a rounded crown.

Leaf: Deciduous. Alternate, simple, 4 to 6 inches long, sharp toothed margins, lanceolate to obvate in shape.

Flower: Monoecious. Male flowers borne on long yellowish-green catkins. Female flowers very small in the leaf axil and green to reddish in color. Appearing with the leaves.

Fruit: Acorns are ½ inch long, dark brown in color when mature, with cup bowl-shaped and 1/3 covered by a cap with appressed scales.

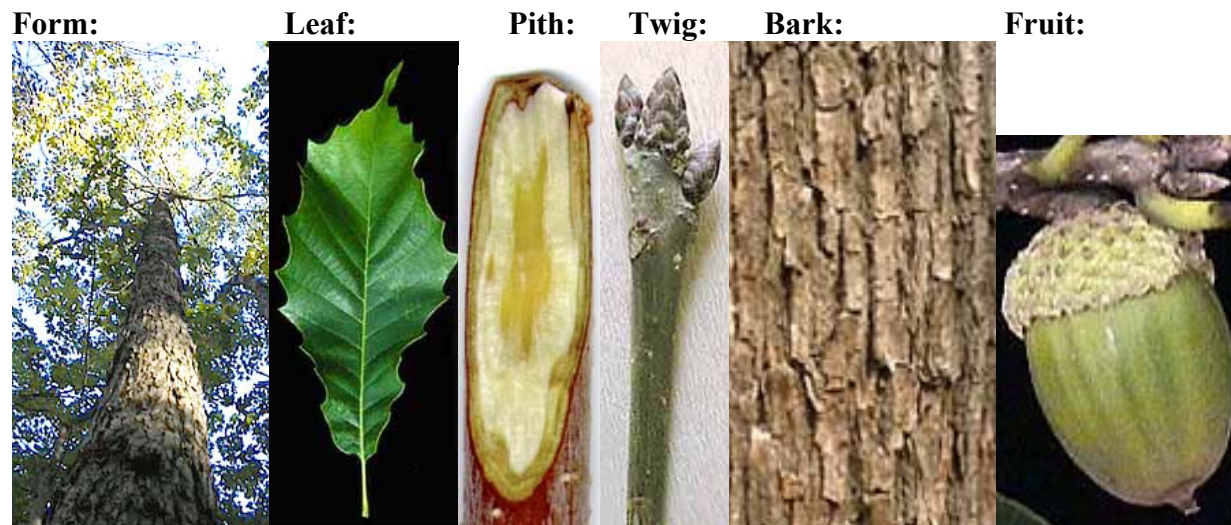
Twig: Slender to moderate, light orange to brown in color, with many short, sharp-pointed, conical terminal buds at the tip.

Bark: Light gray and flaky.

Habitat: Grows in basic rich moist soils throughout the southeastern United States.

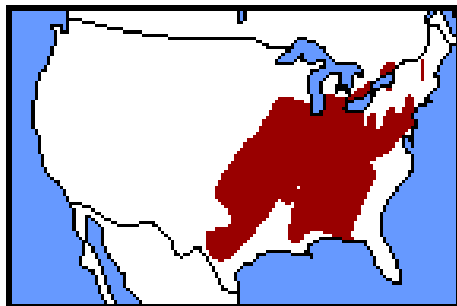
Economic value: Produces a moderate quality lumber. Produces a moderate quality lumber used for construction, railroad ties, posts, and as fuel. Sometimes used in landscaping.

Wildlife value: Provides habitat and food for a variety of wildlife.

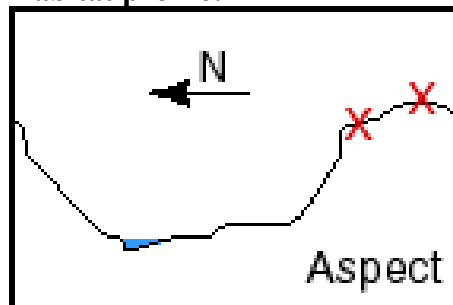


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Distribution:



Habitat profile:



Water oak *Fagaceae Quercus nigra*

Form: Medium-sized tree approximately 50 to 80 feet tall with rounded crown and ascending branches.

Leaf: Deciduous. Alternate, simple, 2 to 4 inches long, hairless with entire or bristle-tipped margins, and extremely variable in shape, normally wedge with the area near the apex being the broadest, may be 0 to 5 lobed. Buds are hairy.

Flower: Monoecious. Male flowers borne on catkins. Female flowers borne on spikes. Appearing with the leaves.

Fruit: Acorns are ½ inch long, very dark in color, with flat, saucer shaped cap that covers 1/3 of the acorn.

Twig: Slender, smooth, dull, red-brown in color, with many short, sharp-pointed, angular, red-brown terminal buds at the tip.

Bark: Grayish –black with irregular fissure in older trees.

Habitat: Grows in a range of habitats but is found predominantly in bottomland forests.

Economic value: Produces a moderate quality lumber.

Wildlife value: Provides habitat and food for a variety of wildlife.

Form:



Leaf:



Twig:



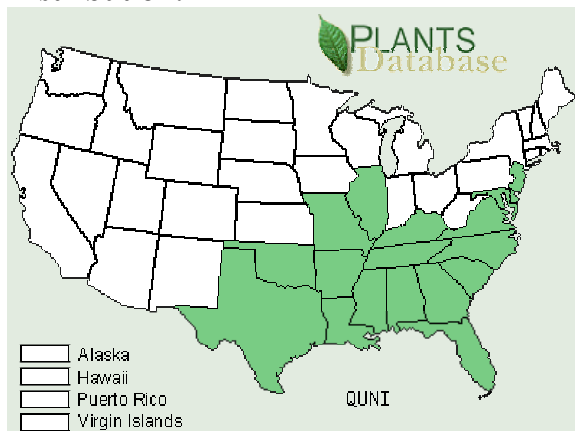
Bark:



Fruit:



Distribution:



Willow oak *Fagaceae Quercus phellos*

Form: Medium-sized tree approximately 60 to 80 feet tall, with a slender bole and rounded crown with ascending branches.

Leaf: Deciduous. Alternate, simple, 2 to 4 inches long, entire margins, lanceolate in shape.

Flower: Monoecious. Male flowers borne on catkins. Female flowers borne on spikes.

Appearing before the leaves.

Fruit: Acorns are ½ inch long, yellowish-green in color, rounded at the base with thin saucer-shaped cap, densely matted or woolly with closely appressed scales.

Twig: Slender, smooth, somewhat lustrous, hairless, red-brown in color, with many short, sharp-pointed terminal buds at the tip.

Bark: Young tree gray in color with smooth gray stems, older trees with irregular ridges and furrows and gray in color.

Habitat: Grows in a range of habitats but is found predominantly in poorly drained areas and bottomland forests.

Economic value: Produces a poor quality lumber and is often used as an ornamental tree and shade tree in landscaping.

Wildlife value: Provides habitat and food for a variety of wildlife.

Form:



Leaf:



Twig:



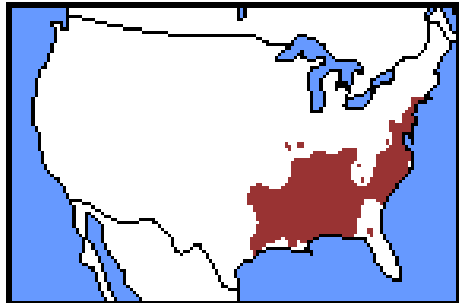
Bark:



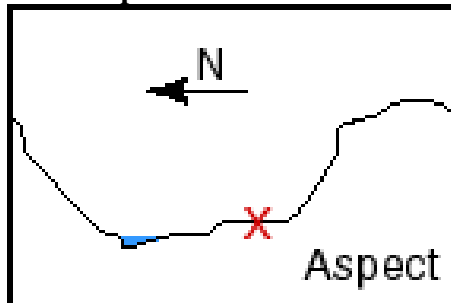
Fruit:



Distribution:



Habitat profile:



Northern red oak *Fagaceae Quercus rubra*

Form: Medium-sized tree, 70 to 90 feet tall with a broadly rounded crown and wide-spreading or ascending branches.

Leaf: Deciduous. Alternate, simple, 5 to 8 inches long, toothed margins, oblong to widely obovate in shape, lobed with sinuses $\frac{1}{3}$ to $\frac{1}{2}$ the distance to the midrib, teeth end in slender bristles, dull green above. Both sides are densely matted or wool when young..

Flower: Monoecious. Male flowers borne on catkins. Female flowers borne on spikes. Appearing with the leaves.

Fruit: Acorns are large, $\frac{3}{4}$ inch long, borne on short stalks, shallow saucer-shaped cup, with cap covering $\frac{1}{4}$ of the acorn.

Twig: Smooth, stout, greenish-brown to reddish-brown, with ovoid, red-brown buds that are multiple and pointed at the tip.

Bark: Dark brown with low broad ridges. Inner bark is reddish.

Habitat: Grows in a range of habitats but is found predominantly in rich hardwood forest in various states in the middle and eastern United States.

Economic value: Produces a high quality lumber used in construction as well as to make furniture, cooperage, interior finish, railroad ties, and mine props.

Wildlife value: Provides habitat and food for a variety of wildlife.

Form:



Leaf:



Pith: Twig:



Bark:



Fruit:

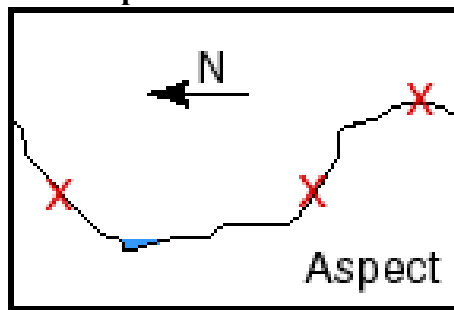


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Distribution:



Habitat profile:



Black oak *Fagaceae Quercus velutina*

Form: Large-sized tree approximately 60 to 80 feet tall, with an irregular crown.

Leaf: Deciduous. Alternate, simple, 3 to 5 inches long, widely obovate to ovate in shape with 5 to 7 bristle-tipped and toothed lobes. Leaf is thick and leathery in texture.

Flower: Monoecious. Male flowers borne on catkins. Female flowers borne on spikes.

Fruit: Acorns are ½ inch long on short stalks, ovoid to deep tuberculate in shape and covering ½ the acorn with cap scale appressed and densely matted or woolly.

Twig: Stout, reddish-brown to a gray with some mottling, many large ovoid sharp pointed buds at the tip.

Bark: Young trees with smooth gray bark to older trees with thick black bark with deep furrows, irregular ridges and breaks. Inner bark tends to be orange in color.

Habitat: Grows in dry well-drained soil throughout the southeastern United States.

Economic value: Produces a lower quality lumber than most oaks and is used for general construction, interior finish, furniture, and cooperage. Tannic acid is also extracted from the bark for tanning leather.

Wildlife value: Provides habitat and food for a variety of wildlife.

Form:



Leaf:



Pith:



Twig:



Bark:

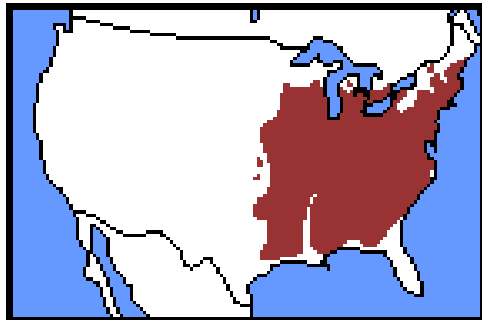


Fruit:

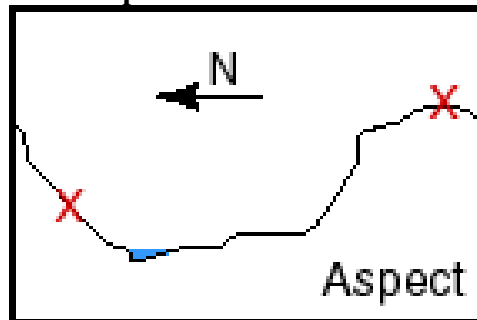


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Distribution:



Habitat profile:



HAMAMELIDACEAE

(Witch-hazel Family)

Sweet gum Hamamelidaceae *Liquidamber styracifolia*

Form: Medium to large tree 60 to 80 feet in height with a straight stem and a pyramidal crown.

Leaf: Deciduous, simple, alternate, 4 to 6 inches wide, finely serrate margin star-shaped, palmately veined, orbicular, usually five-lobed, and a. When the leaf is crushed as sweet fragrant smell.

Flower: Monoecious. Male flowers borne on an upright raceme without sepals and petal, small, green in color and not showy. Female flowers borne on a slender stalk, small, capped with a spherical head, green in color and not showy.

Twig: Moderate and stout, slightly angled, medium textured, shiny green to yellow-brown, with apparent corky protrudences. Large terminal buds are obvoid and are usually sticky and covered with orange-brown scales.

Fruit: Sharp pointy, woody brown spheres, 1 to 1 ½ inches in diameter on long slender stalks with openings in the surface that release 2 seeds from each capsule.

Bark: Gray brown in color and has irregular furrows and ridges.

Habitat: Grows in low moist rich upland woods throughout the southeastern United States except in high altitudes.

Economic value: Produces a high quality lumber used for furniture, cabinet making, interior finish, and boxes. The sap is often used in perfumes and drugs and can be chewed. It is also an ornamental tree used in landscaping.

Wildlife value: Provides habitat and food for a variety of wildlife.

Form:



Leaf:



Twig:



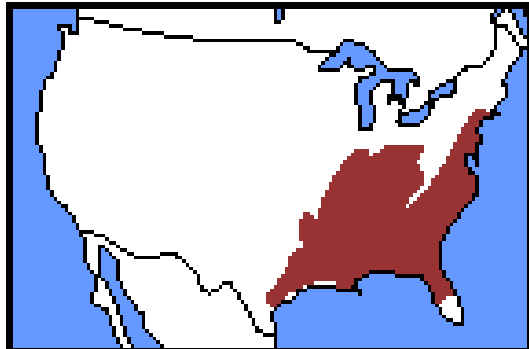
Bark:



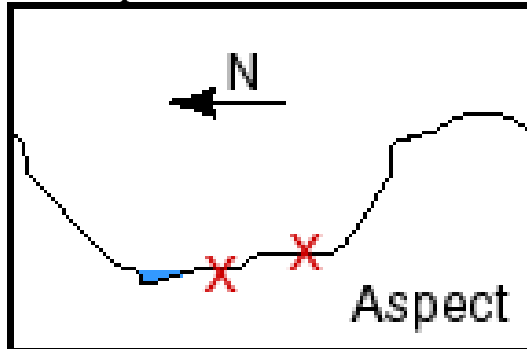
Fruit:



Distribution:



Habitat profile:



JUGLANDACEAE

(Walnut Family)

Species in the Juglandaceae family are monoecious trees and few shrubs that are found the North Temperate zone. The family is comprised of seven different genera and approximately 50 species. The leaves are deciduous, alternate, odd-pinnately compound, straight veined, petiolate, and without stipules. Flowers are monoecious, with the male flowers in long drooping catkins, solitary or fascicled. The male flower consists of bracteate, three or more stamens, anthers are hairy. The female flower consists of bracteate that is terminal, solitary or may be in few flowered spikes that have a four-lobed perianth. Fruit is a drupe or nut.



Mockernut hickory *Juglandaceae Carya tomentosa*

Form: Medium-sized tree 50 to 75 feet in height with a straight stem and a rounded crown.

Leaf: Deciduous. Alternate, pinnately compound, usually with 7 to 9 leaflets, 9-14 inches long, lanceolate to obovate-lanceolate in shape. The terminal leaflet is larger than the laterals. The rachis is stout and very hairy. Green turning to yellow in the fall in color.

Flower: Monoecious. Male flowers with drooping catkins, three hanging from one stalk, approximately 3 to 4 inches in length. Female flowers in 2 to 5 clusters close to the tip of the twig.

Fruit: Obovoid to almost spherical in shape, 1 ½ to 2 inches long. The husk is thick and splits open; the nut is 4-ribbed, sweet and edible.

Twig: Stout and pubescent, the 3-lobed leaf scars, large terminal bud, and the scales are deciduous, revealing a silky white bud.

Bark: Gray-brown in color, with round interlaced ridges and shallow furrow, close and firm.

Habitat: Grows in rich well-drained soils and sometimes on rocky mountain slopes and dry ridges throughout the southeastern United States

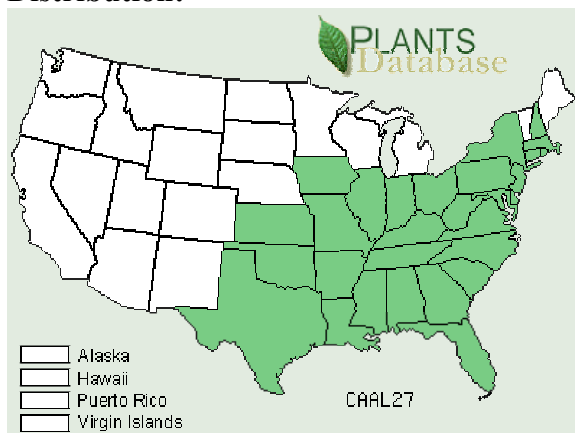
Economic value: Produces a moderate quality lumber and can be used as veneer. It is also used as fuel wood.

Wildlife value: Provides habitat and its nut is small but provides food for a variety of wildlife.

Form: **Leaf:** **Twig:** **Bark:** **Fruit:**



Distribution:



* NOTE: *Carya pallida* (pale hickory) is a rare species also found along the trail. It can be distinguished from the Mockernut by its smaller fruit and leaflets, silvery bud scales, and leaflets silvery or whitish on the underside.

LAURACEAE

(Laurel Family)

Sassafras Lauraceae *Sassafras albidum*

Form: Small to medium sized tree; flat-topped to rounded crown.

Leaf: Deciduous. Alternate, simple, 3-6" long. Entire margins, obovate, wedge-shaped bases. Three lobed patterns, usually all present: 3 lobes (trident-shaped), 2 lobes (mitten-shaped) or egg shaped. Smooth, bright green above, paler below. Strong, spicy fragrance when broken or crushed.

Flower: March – April. Greenish-yellow. Dioecious.

Fruit: Matures August – September. Fleshy, blue drupes, borne on red stalks.

Twig: Yellowish-green, sometimes hairy. One bundle scar per leaf scar. True end buds present, larger than terminal buds; buds ¼ inch, green. Strong, spicy fragrance when broken.

Bark: Reddish-brown and furrowed when mature. Strong, spicy fragrance when cut.

Habitat: Occurs in a variety of habitats, invades abandoned fields, sandy or stony but fertile soil.

Economic value: Lumber used for posts and furniture. Tea may be made from boiling the outer bark of the roots. Sassafras oil from the bark is used to flavor candy and medicine, and is sometimes used to scent soap.

Wildlife value: Fruits provide food for many species of birds.

LEAVES and FRUIT



TWIG w/BUD



PITH

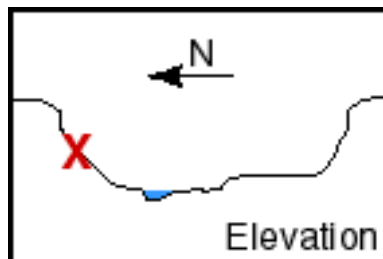


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DISTRIBUTION



HABITAT PROFILE



Spice bush *Lauraceae Lindera benzoin*

Form: Large shrub.

Leaf: Deciduous. Alternate, simple, 3-5" long. Entire margins, ovate to obovate, tapered at base. Smooth above and smooth or slightly hairy beneath. Strong, spicy fragrance when broken or crushed.

Flower: March – May. Yellowish-green, in dense clusters.

Fruit: Matures September – October. Green drupe, turns bright red as it ripens. About 3/8" long, fragrant when crushed.

Twig: Olive-green to brown. Buds are distinctive, globose with 2-3 yellowish-green scales. Twigs and buds have strong, spicy fragrance when broken or crushed.

Bark: Brown to gray-brown, white lenticels.

Habitat: Wet soils as in bottomlands, on stream banks and around springs.

Economic value: Bark used as a treatment for dysentery, coughs and colds.

Wildlife value: Fruits provide food for birds and butterfly caterpillars feed on the leaves.

FORM



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LEAVES w/ TWIGS and FRUIT

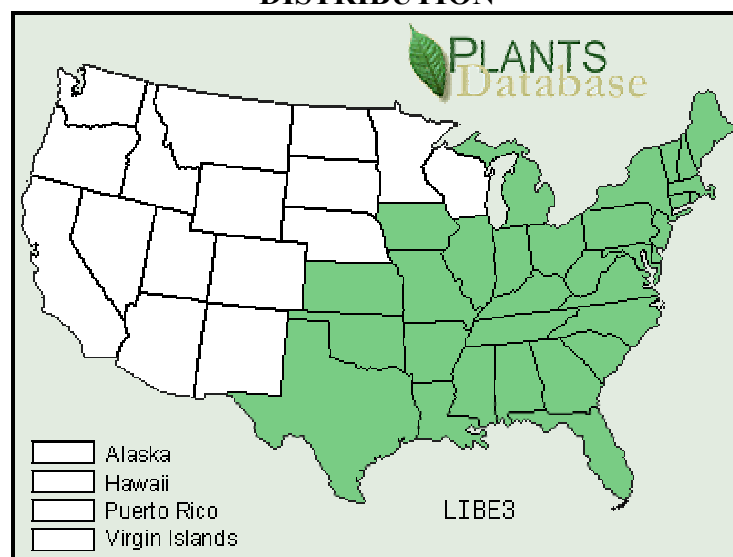


William S. Justice @ USDA-NRCS PLANTS Database

FLOWER



DISTRIBUTION



MAGNOLIACEAE

(Magnolia Family)

The Magnolia family includes 12 genera and about 230 species. Members are temperate to tropical plants, trees, shrubs and creepers. Leaves are usually alternate, simple, large, leathery and are often evergreen. The leaf-buds are covered with membranous, deciduous stipules. The large, showy flowers are usually solitary and perfect. The fruits are either fleshy or not fleshy and aggregated. The wood is usually white and twigs are often aromatic.

Tulip poplar Magnoliaceae *Liriodendron tulipifera*

Form: Tall, straight tree. Shape dependent on whether individual is in a stand of trees or in the open. The former situation produces a very straight, mostly limb-free trunk for a great distance from the ground, the latter situation produces a more oval-shaped silhouette.

Leaf: Deciduous. Alternate, simple, 4-6" across. Entire margins, 4-lobed, somewhat tulip shaped, unmistakable. Smooth and dark green above, smooth, paler below. Aromatic when crushed.

Flower: April – June. Large (2 ½"), showy with yellow-green petals and orange corolla.

Fruit: Matures August – October. Cluster of slim, winged, single-seeded fruits; cluster is cone-like structure about 3" long.

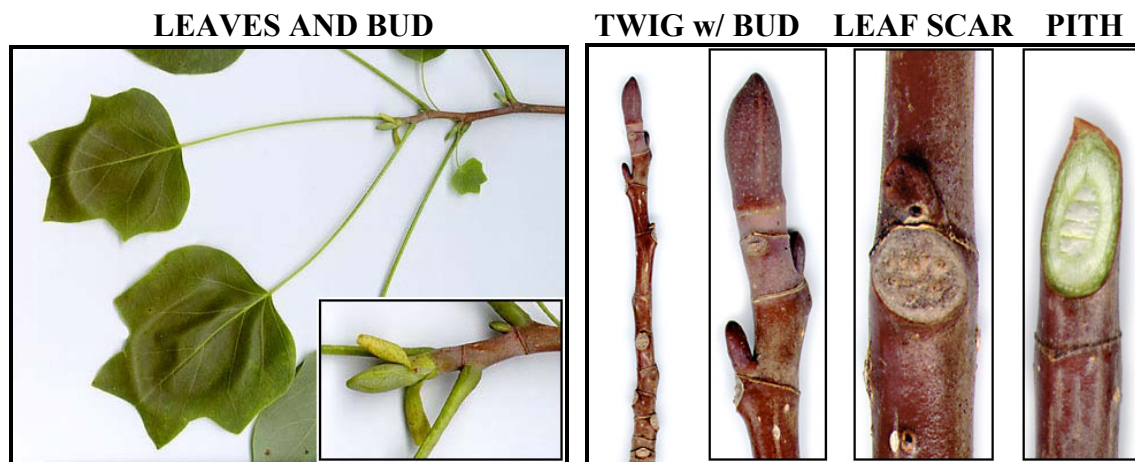
Twig: Reddish-brown, hairless, often with shiny appearance. Stipule scars encircle the entire twig. Elongated and valvate buds. Pith is chambered. Several bundle scars per leaf scar. Buds and twigs aromatic when broken or crushed.

Bark: Young trees smooth, ashy-gray; older trees ridged and furrowed in a diamond-shaped pattern, often with whitening in grooves or in patches.

Habitat: Bottomlands, but also found on rocky mountain slopes.

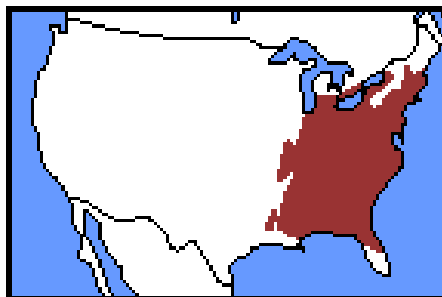
Economic value: Wood is easily worked and used for construction grade lumber.

Wildlife value: Provides food (fruits and twigs) and shelter for a variety of wildlife. Older trees often have sapsucker holes – the result of the feeding method of the woodpecker species.

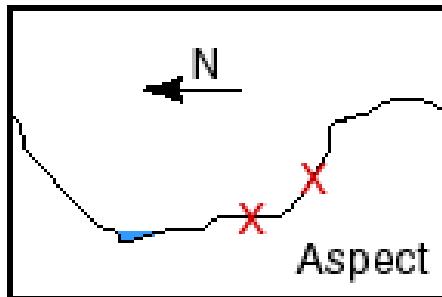


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DISTRIBUTION



HABITAT PROFILE



Southern magnolia Magnoliaceae *Magnolia grandiflora*

Form: Medium tree with a pyramid-shaped crown.

Leaf: Evergreen. Alternate, simple, 5-8" long. Entire margins, oblong or elliptical. Leaves are thick, leathery in appearance; very shiny green above and rusty-hairy beneath (not always).

Flower: May – June. Very showy, large (6-8" wide) with white petals. Lemon scented.

Fruit: Matures October – November. Follicles are aggregated into a 3-5" long, cylindrical, green (changing to rusty-hairy) cone.

Twig: Twigs and buds are covered with a rusty tomentum (hairy covering); terminal bud is 1 – 1 ½" long and whitish to rusty red. Pith chambered.

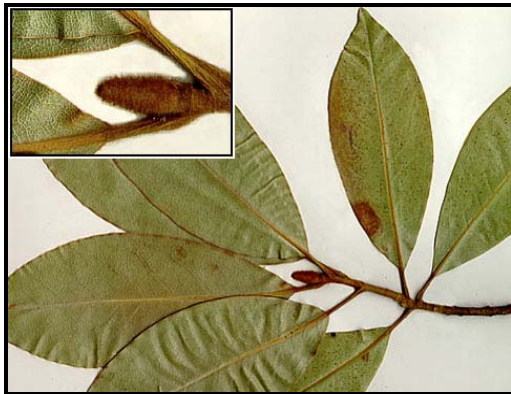
Bark: Young trees smooth; older trees with close plates or scales. Brown to gray in color.

Habitat: Moist forests, edges of coastal swamps and streams. Extensively planted as an ornamental tree outside of its natural habitat.

Economic value: Wood used to make furniture and other woodwork (main source of magnolia lumber). Magnolias are widely planted in parks and gardens as ornamental trees.

Wildlife value: Seeds eaten by a variety of wildlife. Provides shelter and habitat as well.

LEAVES AND BUD



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FRUIT

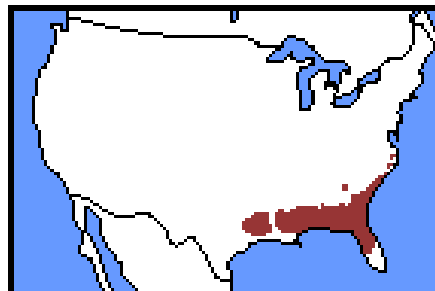


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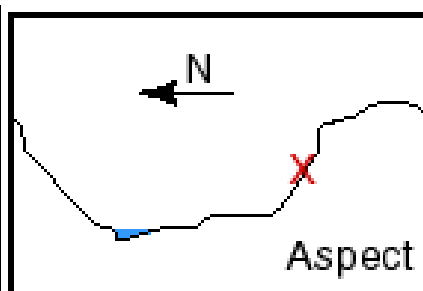
FLOWER



DISTRIBUTION



HABITAT PROFILE



MORACEAE

(Mulberry Family)

Red mulberry Moraceae *Morus rubra*

Form: Small tree with dense, rounded, spreading crown. The only native mulberry in the eastern United States.

Leaf: Deciduous. Alternate, simple, 3-5" long. Sharply toothed margins, ovate or oblong heart-shaped, heart-shaped base, pointed at tip. Some have 2-3 lobes. Dark green and rough above, paler and sometimes hairy below.

Flower: Usually dioecious. Males and female flowers are in the form of catkins, male catkins slightly larger.

Fruit: Matures in July. About 1" long, resemble blackberry shape and color. Very tasty.

Twig: Greenish-brown, tinged with red. Several bundle scars per leaf scar. Buds about 1/4" long, ovoid and pointed. Terminal bud absent. Twigs exude milky sap when cut.

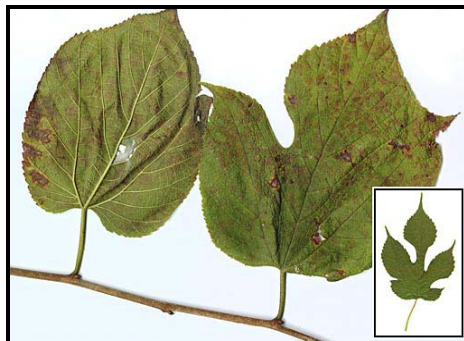
Bark: Dark brown, furrowed, often peels off in long flakes.

Habitat: Bottomlands, moist soil.

Economic value: Little commercial value but used for some wood products. Fruit used to make jellies, jams, pies etc.

Wildlife value: Fruits eaten by a variety of wildlife, especially birds and black bear.

LEAVES



TWIGS w/ BUDS

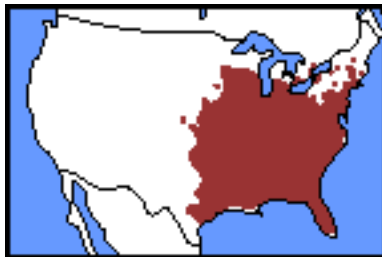


FRUIT

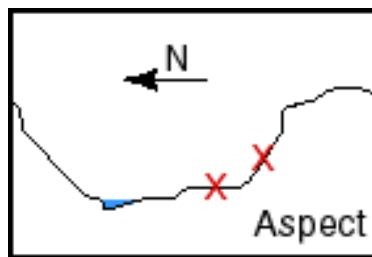


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DISTRIBUTION



HABITAT PROFILE



MYRICACEAE

(Wax-myrtle , Sweet Gale Family)

Wax myrtle *Myricaceae Myrica cerifera*

Form: Shrub or small tree. Usually irregularly shaped with a crooked or twisting trunk. Often forms clumps or thickets.

Leaf: Evergreen. Alternate, simple, about 2-4" long. Toothed margins, narrow (5/8" wide) with tapered base. Leaves are leathery, shiny and dark green above and light green below. Yellow resin dots are found on both sides. Very fragrant when crushed.

Flower: Dioecious. Male and females flowers are small, 1/2"; appear as catkins in spring.

Fruit: Small (1/8" diameter), waxy, bluish-white drupes. Clustered. Not all plants produce fruits since staminate and pistillate flowers are produced on separate plants.

Twig: Sparsely hairy or hairless. Becoming smoother with age. Buds yellowish.

Bark: Smooth, greenish-gray with gray blotches.

Habitat: Wet, sandy soils.

Economic value: Fruit may be harvested for wax to make scented candles.

Wildlife value: Fruit provides food for a variety of bird species.

LEAVES



TWIGS AND FRUIT

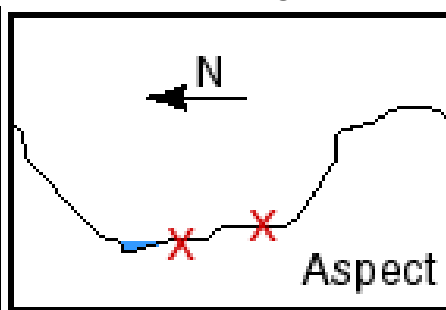


Larry Allain @ USDA-NRCS PLANTS Database

DISTRIBUTION



HABITAT PROFILE



NYSSACEAE

(Sour Gum Family)

Black gum Nyssaceae *Nyssa sylvatica*

Form: Medium to large sized tree with branches at right angles to the trunk.

Leaf: Deciduous. Alternate, simple, 3-5" long, 1-3" wide. Entire margins (rarely toothed), obovate, wedge-shaped bases, pointy tips. Leaves leathery and densely clustered at branchlets. Dark green and shiny above, paler beneath and either smooth or slightly hairy. Leaves turn bright red in early September.

Flower: Hang in clusters with leaves, greenish-white, not showy.

Fruit: Matures in October. Dark, purply-blue drupe, ½" long, fleshy coating. Borne 2-3 together on long stalk.

Twig: Reddish-brown to gray, smooth, curved spur shoots often present. Pith chambered with cross-plates at intervals. True end buds; buds multicolored. 3 bundle scars per leaf scar.

Bark: Dark gray, deeply fissured, irregular pattern. Fairly non-descript.

Habitat: Best developed in coastal plain swamps, but found in drier areas like mountain ridges and abandoned fields.

Economic value: Wood is very difficult to work, but used for furniture and other wood products.

Wildlife value: Young sprouts provide food for wildlife, but become distasteful with age. Fruit provides food for a variety of wildlife.

LEAVES, TWIGS AND BUDS



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FLOWER

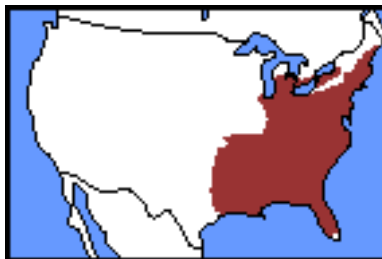


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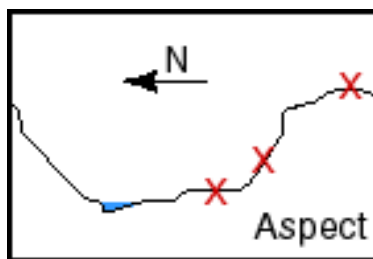
FRUIT



DISTRIBUTION



HABITAT PROFILE



OLEACEAE

(Olive Family)

Green ash Oleaceae *Fraxinus pennsylvanica*

Form: Medium tree, irregularly shaped.

Leaf: Deciduous. Opposite, pinnately compound, 9-12" long. 7-9 leaflets are each 3-5" long lanceolate to elliptical, broadly wedge-shaped or rounded bases. Green and smooth on both sides, finely toothed margins or not.

Flower: Dioecious. Male and female flowers lack petals.

Fruit: Matures September – October. One-winged samara.

Twig: Gray to green-brown. Leaf scars semi-circular. Buds rusty-brown, downy.

Bark: Ashy-gray to brown. Ridges form obvious diamond pattern.

Habitat: Bottomlands, stream banks.

Economic value: Well-suited for plantation management systems and can yield quality solid-wood products.

Wildlife value: Provides food and shelter for a variety of wildlife.

LEAVES



STEM



BUD



LEAF SCAR & PITH



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FLOWER



FRUIT

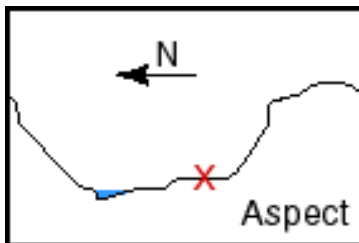


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DISTRIBUTION



HABITAT PROFILE



OROBANCACEAE

(Broomrape Family)

Beechdrop Orobanchaceae *Epifagus virginiana*

Form: Herbaceous, annual plant that is parasitic on beech trees.

Leaf: Scales with no chlorophyll, not real leaves.

Flower: August – October. Inconspicuous, whitish flowers with brown and purple markings, irregularly shaped, up to ~0.5 inches.

Fruit: Capsule opening by 2-valves.

Twig: Brown or yellowish stems, very branched.

Bark: n/a

Habitat: Grows under beech trees (*Fagus grandifolia*).

Economic value: Used as an astringent

Wildlife value: None.

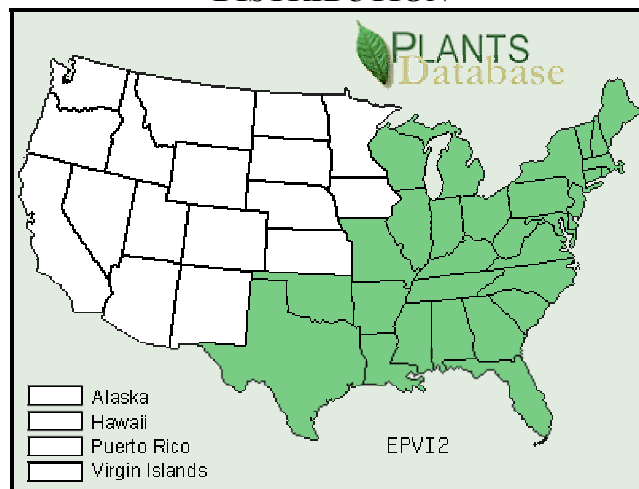
FORM



STEM AND FLOWERS



DISTRIBUTION



PINACEAE

(Pine Family)

The Pinaceae family includes 10 genera and about 225 species. Members are mostly temperate, resinous, evergreen trees (sometimes shrubs) found almost exclusively in the Northern Hemisphere. They are generally monoecious with linear, needle-like leaves. The male strobili are small and terminal or clustered along the stem. The female cones are woody and often large.

Loblolly pine *Pinus taeda*

Form: Medium to large tree, generally with a straight, limb-free trunk and dense crown.

Leaf: Evergreen. Usually 3 needles per fascicle, 6-9" long and light green. Basal sheath usually ½" or longer.

Flower: Monoecious. Male red-yellow flowers are long, cylindrical and clustered at tips of branches. Female flowers are yellow-purple.

Fruit: Cones mature September – October. Reddish-brown in color, ovoid to cylindrical in shape, about 3-6" long. Umbo has characteristic sharp spine.

Twig: Orangish-brown, about ¼ inch in diameter, end buds light reddish brown.

Bark: Variable. Ranges from brown and scaly bark of younger trees to reddish-brown ridged and furrowed bark of older trees.

Habitat: Dry and wet sites; rapidly invades old fields.

Economic value: Important lumber tree. One of the fastest growing pines in the southeastern states.

Wildlife value: Provides food (saplings, seeds) and shelter/habitat for a variety of wildlife. In Virginia, the majority of active Bald Eagle nests are found in Loblolly pine crowns.

FORM



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NEEDLES

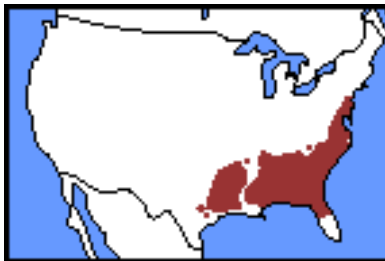


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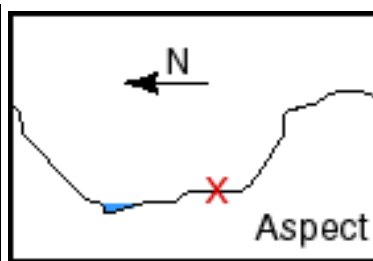
CONES



DISTRIBUTION



HABITAT PROFILE



Virginia pine *Pinaceae Pinus virginiana*

Form: Small to medium tree. Poorly shaped, eventually develops flat crown.

Leaf: Evergreen. Usually 2 needles per fascicle, 1 ½-3" long, twisted and grayish-green.

Flower: Monoecious. Male yellow flowers are cylindrical and near tip of branch. Female flowers are yellow to red with a curved prickly present.

Fruit: Cones mature September to November. Reddish-brown in color, conical or ovoid in shape, about 1 ½ -2 ½" long, held at right angles to branches. Umbo has characteristic needle-like prickly. Cones are persistent and may remain on tree for many years.

Twig: Rather smooth, yellow-green, flexible. Young shoots purplish with whitish, waxy bloom.

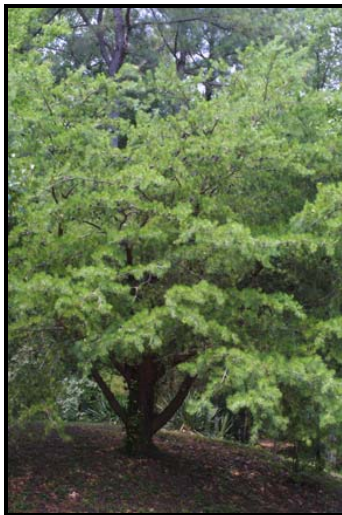
Bark: Dark brown. Younger trunks smooth, older trunks shallowly fissured with scaly plates. Upper parts of trunk often have cinnamon colored patches.

Habitat: Poor soils, invades abandoned fields.

Economic value: Of little importance for lumber industry.

Wildlife value: Provides food and shelter for a variety of wildlife.

FORM



NEEDLES



CONES



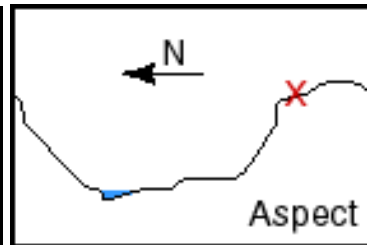
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DISTRIBUTION



HABITAT PROFILE



ROSACEAE

(Rose Family)

Black cherry Rosaceae *Prunus serotina*

Form: Medium tree with, usually, a straight, limb-free trunk.

Leaf: Deciduous. Alternate, simple, 2-5" long. Finely serrated margins, oval to oblong, lance shaped. Dark green above, paler below. Midrib slightly hairy.

Flower: May – July.

Fruit: Matures June – October. Dark purple flesh with bitter-sweet taste.

Twig: Reddish-brown. Strong odor when scratched or broken. Buds about 1/5" long, with several, glossy reddish-brown to green scales.

Bark: Smooth. Young trees have horizontal lenticels. Older trees become very dark and begins to break up into irregular plates.

Habitat: Woods and thickets.

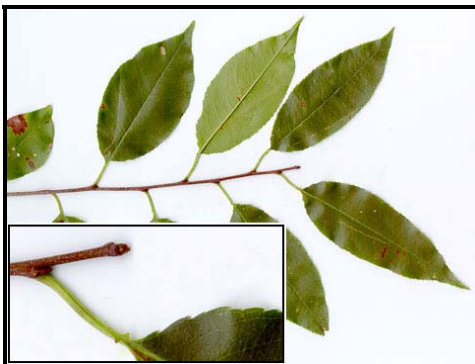
Economic value: Valuable in the lumber industry, especially for making furniture. Also provides food for humans.

Wildlife value: Provides food (fruits and twigs) and shelter/habitat for a variety of wildlife. However, the leaves, twigs, bark and seeds of *Prunus serotina* are poisonous to wildlife because they contain hydrocyanic acid and may cause death. The fruits are safe and an important part of the diet of many bird and mammal species.

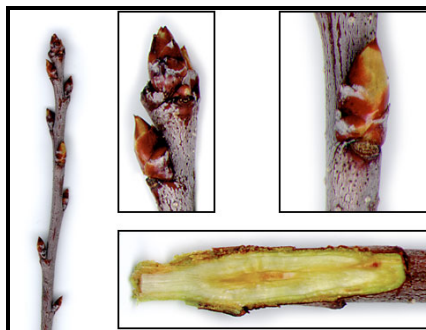
FORM



LEAVES



TWIGS w/ BUDS and PITH

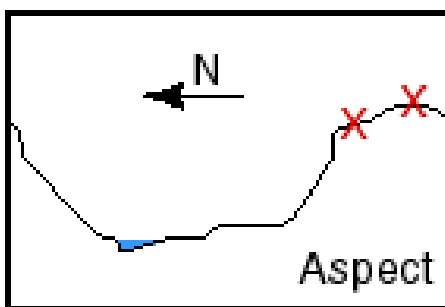


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DISTRIBUTION



HABITAT PROFILE



RUBIACEAE

(Madder Family)

Partridge berry Rubiaceae *Mitchella repens*

Form: Creeping, woody vine that does not climb; found along the ground.

Leaf: Evergreen. Opposite, simple, 0.5 inches across. Entire margins, oval to heart-shaped, dark green above and pale yellow below. Mid-rib is pale yellow.

Flower: June – July. Tubular, pinkish-white, about 0.5 inches long. Twin flowers fuse together to form one berry.

Fruit: Red berry, ~¼ inch, persists through winter.

Twig: Light-green to brown, very delicate.

Bark: n/a

Habitat: Woods, well-drained soils.

Economic value: None.

Wildlife value: Fruit eaten by a variety of wildlife: birds and mammals.

FORM



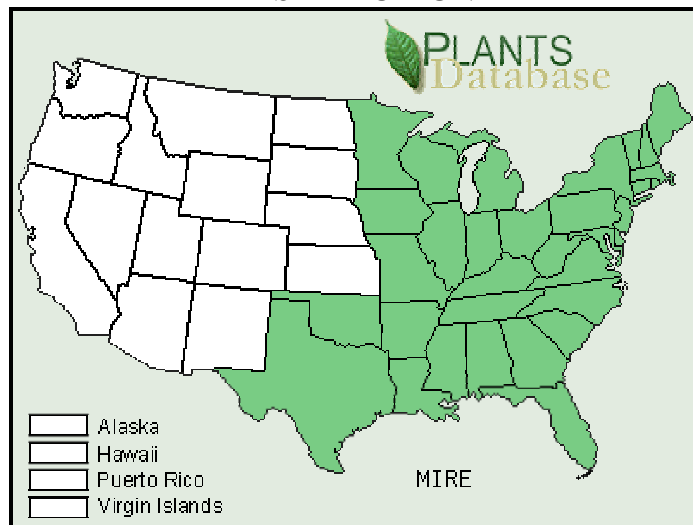
FLOWER



LEAVES and FRUIT



DISTRIBUTION



SAURURACEAE

(Lizard-tail Family)

Lizard tail Saururaceae *Saururus cernuus*

Form: Perennial aquatic herbaceous plant, grows in small colonies. Can grow up to 5 ft, much of plant is underwater.

Leaf: Alternate, simple, 3-4 inches long and 1-1.5 inches wide. Entire margins, on stalks, arrowhead or heart-shaped, dark green.

Flower: White flowers arranged in a 'bottlebrush' shaped, arched spike, 6-8 inches long. After flowers mature, they become nutlets. The arrangement of the nutlets looks like a lizard's tail.

Fruit: Small, green, warty fruits.

Twig: n/a

Bark: n/a

Habitat: Wetlands.

Economic value: None.

Wildlife value: Leaves eaten by turtles. Provides cover, protection and/or areas for laying eggs for many aquatic animals.

FORM and LEAVES

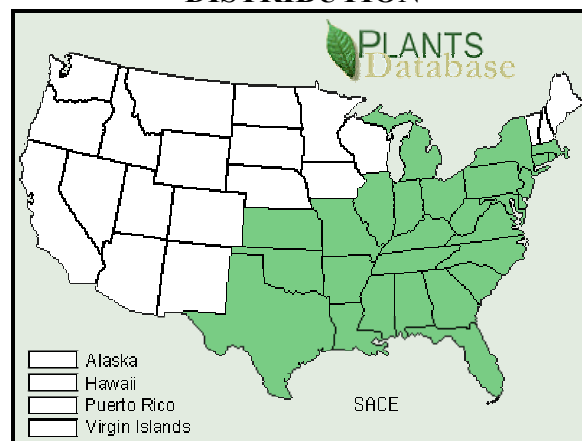


FLOWER



Robert H. Mohlenbrock @ USDA-NRCS PLANTS Database

DISTRIBUTION



SAXIFRIGACEAE

(Saxifrage Family)

Climbing hydrangea Saxifragaceae *Decumaria barbara*

Form: Woody vine, high-climbing, stems with aerial roots.

Leaf: Deciduous. Opposite, simple, 3-6 inches. Entire or toothed margins, elliptical to ovate, leathery, shiny dark green, smooth, above, pale beneath.

Flower: Appear in terminal round clusters. Small, white, fragrant.

Fruit: Brown, urn-shaped capsule.

Twig: Slender, greenish brown. Red, hairy buds.

Bark: Reddish to gray-brown.

Habitat: Moist soils.

Economic value: Cultivated by gardeners.

Wildlife value: None.

FORM and LEAVES



BUD



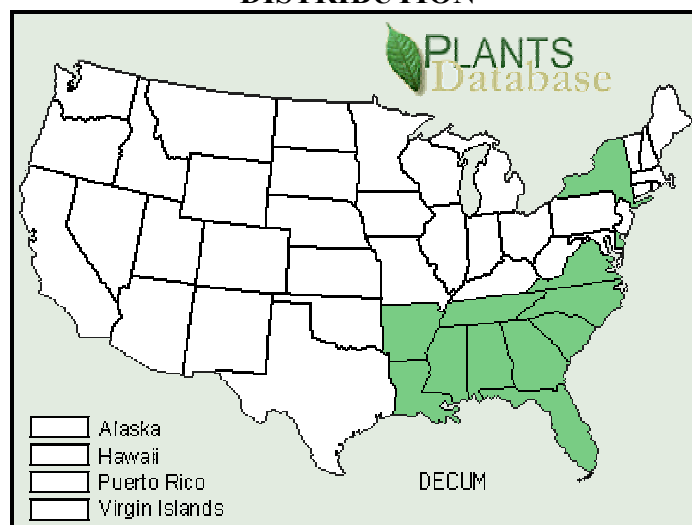
FLOWER



ROOTLETS



DISTRIBUTION



Horsesugar *Symplocaceae Symplocos tinctoria*

Form: Large shrub or small tree.

Leaf: Tardily deciduous. Alternate, simple, 2-6" long. Entire margins (or nearly so), oblong or narrowly elliptical, widest near the middle. Somewhat leathery, shiny green above and yellowish below with yellowish midrib. Taste sweet.

Flower: Small, clustered, white petals.

Fruit: Matures in late summer. Egg-shaped, dry drupes, ½" long, orange-brown.

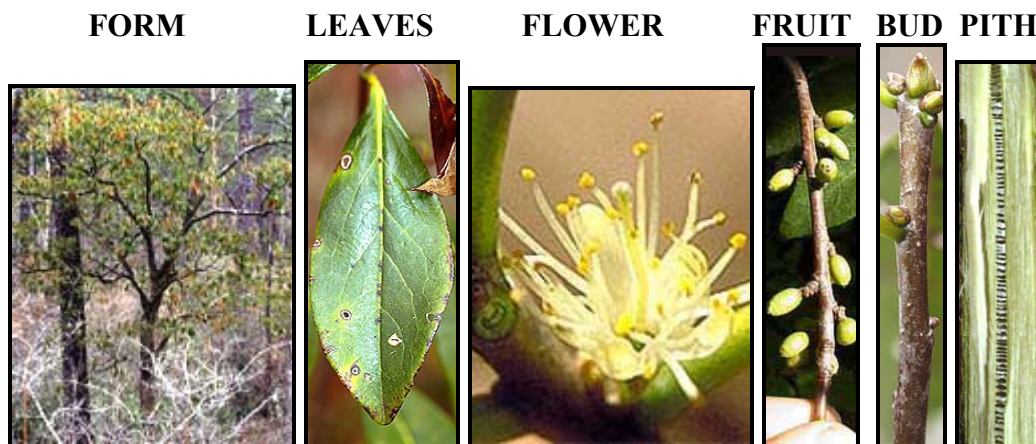
Twig: Reddish brown. Buds large, dark with several scales. Pith chambered.

Bark: Grayish, smooth. Older individuals develop shallow vertical cracks or warty lenticels.

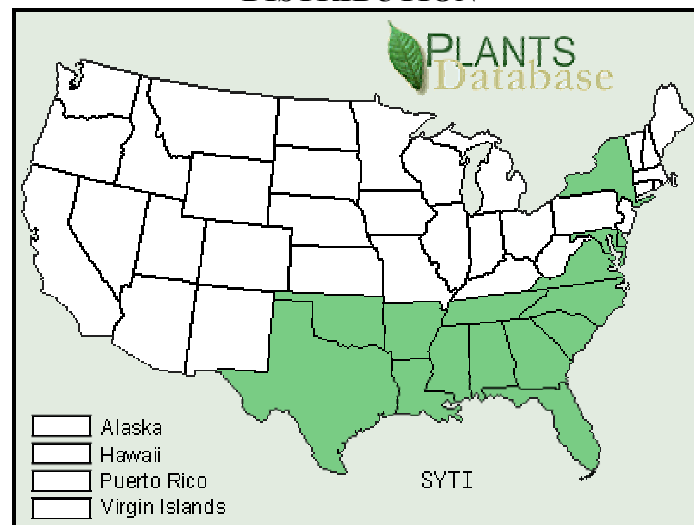
Habitat: Understory of moist upland forests and well-drained lowland forests

Economic value: Sometimes used as an ornamental.

Wildlife value: Flowers are a good source of nectar for butterflies.



DISTRIBUTION



ULMACEAE

(Elm Family)

American elm *Ulmaceae Ulmus americana*

Form: Large tree with, when grown in the open, a trunk that divides into large limbs near the ground, ascending to drooping branchlets. Full-sized wild trees are becoming rare because of disease.

Leaf: Deciduous. Alternate, simple, 3-6" long, 1-3" wide. Doubly serrated margins, uneven base. Variable leaves, may be smooth or rough above, hairy or hairless underneath.

Flower: March – May. Dense clusters of 3-4 fascicles.

Fruit: April – May. Rounded samaras.

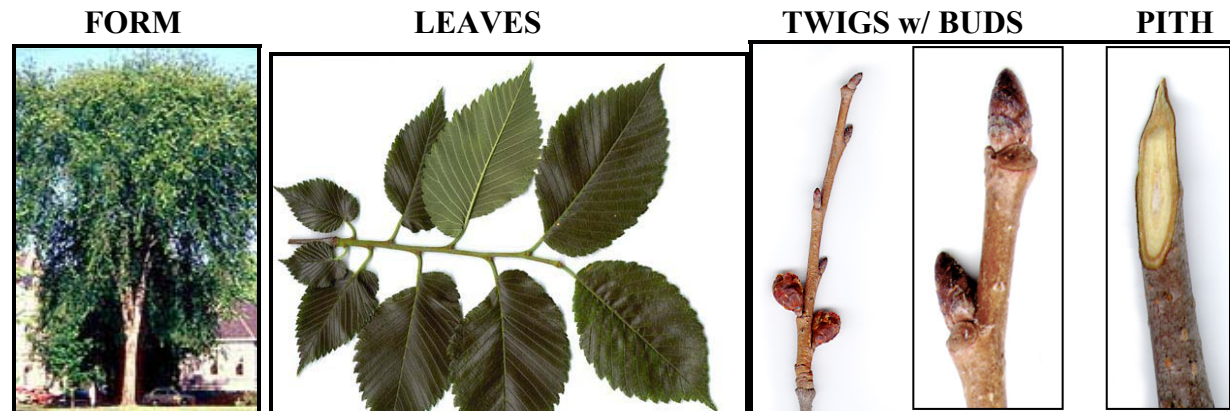
Twig: Smooth, reddish-brown, may be barely hairy. Branchelets do not have corky wings. Buds reddish-brown, more than ¼" long, dark-edged scales.

Bark: Dark gray with diamond shaped pattern of ridges and fissures.

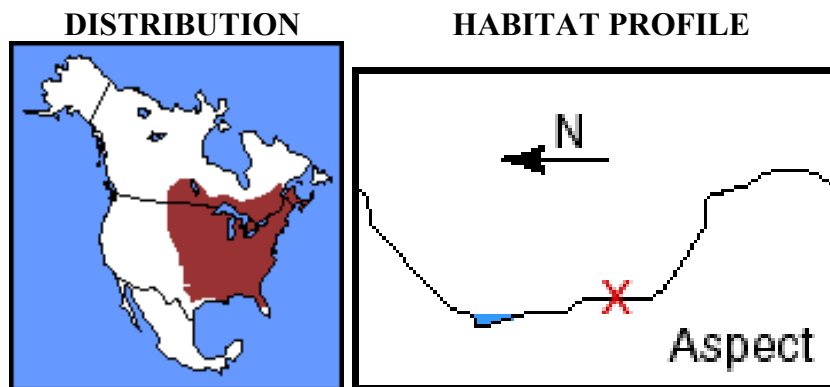
Habitat: Bottomlands.

Economic value: Wood used for wood products although it lacks durability.

Wildlife value: Seeds and twigs provide food for a variety of wildlife.



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Slippery elm *Ulmaceae Ulmus rubra*

Form: Medium size tree with single or divided trunk. Trunk does not branch as low to the ground as *Ulmus americana* and branchlets are less drooping. Broad crown with flattish top.

Leaf: Deciduous. Alternate, simple, 4-7" long, 2-3" wide. Doubly serrated margins, uneven base. Very rough above and hairy below.

Flower: March – May.

Fruit: May – June.

Twig: Ashy-brownish gray, rough-hairy. Buds more than 1/8" long, dark, reddish and hairy. Mucilaginous when chewed.

Bark: Reddish-brown, dark.

Habitat: Uplands.

Economic value: Of little importance to the lumber industry.

Wildlife value: Provides food (seeds and twigs) and shelter/habitat to a variety of wildlife.

FORM



LEAVES w/ BUDS

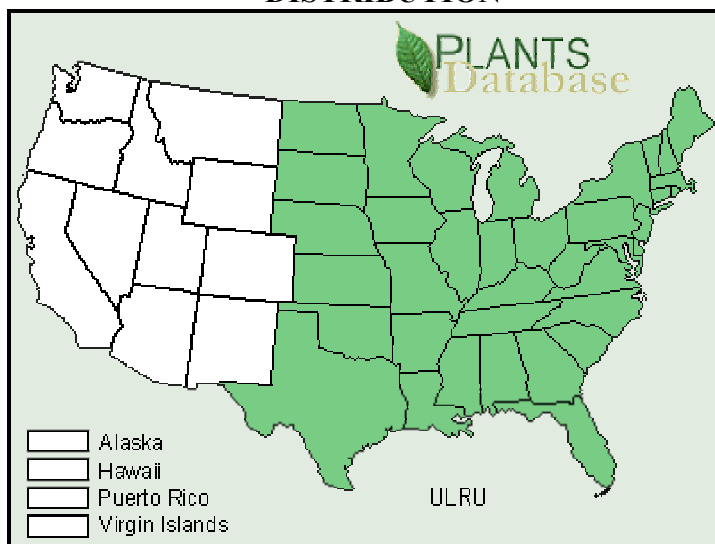


TWIG

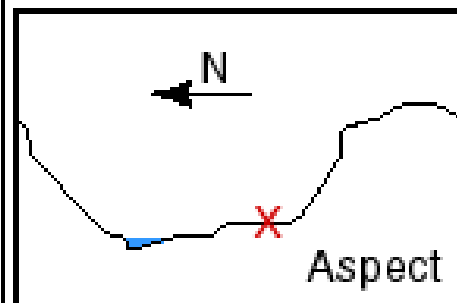


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DISTRIBUTION



HABITAT PROFILE



VITACEAE

(Grape Family)

Virginia creeper Vitaceae *Parthenocissus quinquefolia*

Form: Climbing vine, either ground cover or ascending.

Leaf: Deciduous. Alternate, palmately compound, 5 leaflets per leaf, 3-8 inches across. Serrate margins, elliptical.

Flower: June – July. Small, green clusters on long stems.

Fruit: Matures August through October. Blue-black berries, ¼ inch in diameter, that are borne in clusters.

Twig: Light brown with lenticels. Tendrils apparent.

Bark: Gray-brown and coarsely hairy.

Habitat: Bottomlands.

Economic value: Used for an ornamental ground cover or building cover.

Wildlife value: Fruit provides food for a variety of wildlife.

FORM



LEAVES



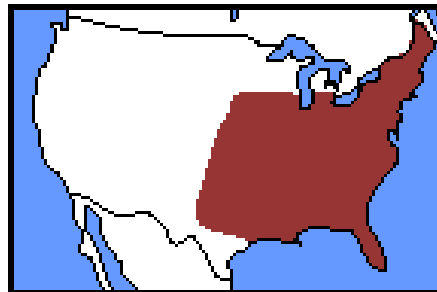
FRUIT



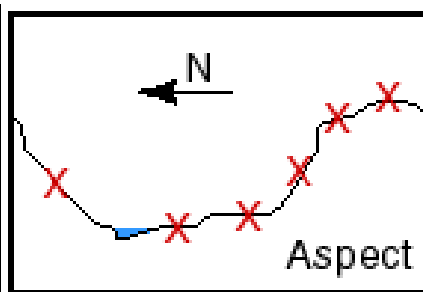
TWIG TENDRILS



DISTRIBUTION



HABITAT PROFILE



Alphabetic listing of Plants by Genus and Species

<i>Genus Species</i>	Page
<i>Acer rubrum</i>	1
<i>Alnus serrulata</i>	8
<i>Carpinus caroliniana</i>	9
<i>Carya tomentosa</i>	35
<i>Castanea dentate</i>	22
<i>Cercis canadensis</i>	20
<i>Cornus florida</i>	12
<i>Cornus stricta</i>	13
<i>Decumaria Barbara</i>	52
<i>Diospyros virginiana</i>	15
<i>Epifagus virginiana</i>	45
<i>Fagus grandifolia</i>	23
<i>Fraxinus pennsylvanica</i>	44
<i>Ilex opaca</i>	3
<i>Juniperus virginiana</i>	14
<i>Lindera benzoin</i>	37
<i>Liquidambar styraciflua</i>	33
<i>Liriodendron tulipifera</i>	39
<i>Lonicera japonica</i>	11
<i>Magnolia grandiflora</i>	40
<i>Mitchella repens</i>	50
<i>Morus rubra</i>	41
<i>Myrica cerifera</i>	42
<i>Nyssa sylvatica</i>	43
<i>Onoclea sensibilis</i>	4
<i>Oxydendron arboreum</i>	17
<i>Parthenocissus quinquefolia</i>	56
<i>Pinus taeda</i>	47
<i>Pinus virginiana</i>	48
<i>Polystichum acrosticoides</i>	5

<i>Prunus serotina</i>	49
<i>Quercus alba</i>	24
<i>Quercus coccinea</i>	25
<i>Quercus falcata</i>	26
<i>Quercus michauxii</i>	27
<i>Quercus muehlenbergii</i>	28
<i>Quercus nigra</i>	29
<i>Quercus phellos</i>	30
<i>Quercus rubra</i>	31
<i>Quercus velutina</i>	32
<i>Sassafras albidum</i>	36
<i>Saururus cernuus</i>	51
<i>Solidago erecta</i>	7
<i>Symplocos tinctoria</i>	53
<i>Thelypteris noveboracensis</i>	6
<i>Toxicodendron radicans</i>	2
<i>Ulmus americana</i>	54
<i>Ulmus rubra</i>	55
<i>Vaccinium corymbosum</i>	18
<i>Vaccinium pallidum</i>	19
<i>Woodwardia virginica</i>	10

Additional References

Foote, L.E. and S.B. Jones Jr. 1989. Native shrubs and woody vines of the southeast: Landscaping uses and identification. Timber Press, Portland, Oregon. (*Lindera benzoin*,

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