



# Planting and Care of Fine Hardwood Seedlings



**Hardwood Tree Improvement and  
Regeneration Center**

North Central Research Station  
USDA Forest Service

Department of Forestry and Natural Resources  
Purdue University



## Native Hardwood Trees of the Central Hardwood Region

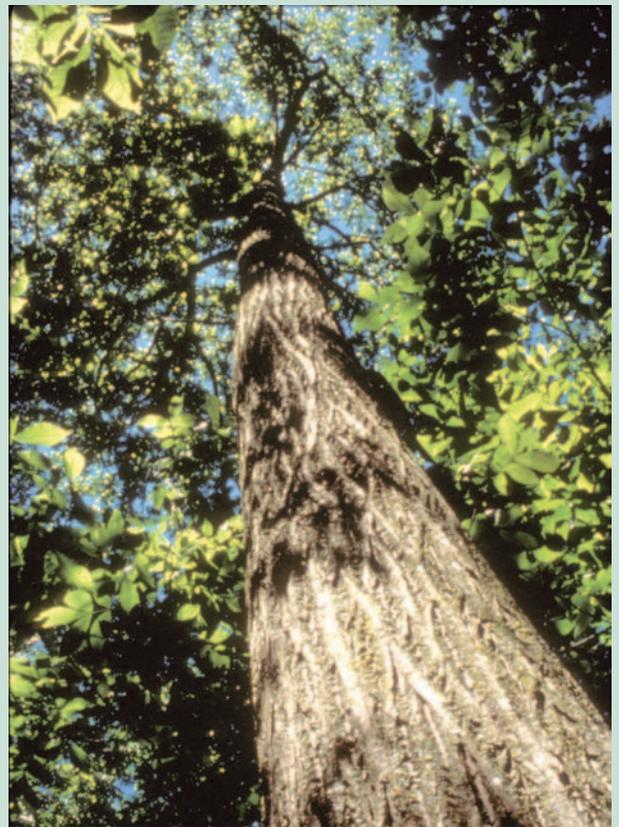
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**T**rees are planted for various reasons including, timber production, wildlife habitat, riparian buffers, native woodland restoration, windbreaks, watershed protection, erosion control, and conservation (Indiana NRCS 2002). Establishment of hardwood plantings requires planning, a commitment of time and resources, proper planting, maintenance, and protection.

Successful establishment and development of hardwood trees is higher if the site is prepared properly and the appropriate species is selected for the site. In the central hardwood region there are six major areas based upon geologic and glacial history (Leopold et al. 1998).

This region includes the Appalachian plateaus (eastern Tennessee and Kentucky, southeastern Ohio, Pennsylvania, and New York), the central lowlands (Ohio, Indiana, Illinois, Wisconsin, and Michigan), the interior low plateau (central Tennessee and Kentucky), the Ouachita and Ozark plateaus (Arkansas and southern Missouri), the ridge and valley (central Alabama through Vermont, from the coastal plain to the south and the St. Lawrence lowland to the north) and blue ridge areas (northern Georgia to central Pennsylvania, including the central and southern portions of the Appalachian crest) (Leopold et al. 1998). This publication is intended to provide the landowner, interested in planting hardwood trees, with a list of native hardwood trees of the central hardwood region and their basic natural growing environment.





Family Name <i>Scientific Name</i>	Common Name	Habitat and Native Range <sup>1,2</sup>
<b>Aceraceae – maple family</b>		
<i>Acer barbatum</i> Michx.	Florida maple, southern sugar maple, hammock maple.	Low, wet, but well-drained soils, limestone ridges, and in the understory. Low drought tolerance; shade tolerant. Discontinuous in the southern US, from southeastern VA, west to eastern OK and TX, and the FL panhandle.
<i>Acer negundo</i> L.	Boxelder, ashleaf maple, boxelder maple, Manitoba maple, California boxelder, western boxelder.	Deep, moist soils near streams. High drought tolerance; shade tolerant. Virtually the entire US, southern Can., and into Mexico.
<i>Acer nigrum</i> Michx. f.	Black maple, black sugar maple, hard maple, rock maple.	Moist, cool sites, limestone soils, and river bottoms. Medium drought tolerance; shade tolerant. New England, to southern Que. and Ont., central MI, WI, southeastern MN, south to northeastern MO, east TN, western NC, VA, WV, MD, PA, and NJ.
<i>Acer pensylvanicum</i> L.	Striped maple, moosewood.	Moist, cool upland sites and understories. Low drought tolerance; shade tolerant. NS, to southern Que. and Ont., MI, eastern MN, south to northeastern OH, northern GA, PA, and NJ.
<i>Acer rubrum</i> L.	Red maple, scarlet maple, swamp maple, soft maple, Carolina red maple, water maple.	Very moist to very dry sites. Medium drought tolerance; shade tolerant. NF, NS, to southern Que. and Ont., MN, south to WI, IL, MO, eastern OK, eastern TX, and east to FL, and the Atlantic Coast.
<i>Acer saccharinum</i> L.	Silver maple, river maple, silverleaf maple, soft maple, water maple, white maple.	Rich, moist bottomlands. Low drought tolerance; shade tolerant. NB, central ME, to southern Que., central Ont., MN, south through southeastern SD, eastern NE, KS, and OK, AR, LA, MS, AL, northwestern FL, to central GA.
<i>Acer saccharum</i> Marsh.	Sugar maple, hard maple, rock maple.	Cool, moist, well-drained soils. Medium drought tolerance; shade tolerant. NS, NB, to southern Que., central Ont., MN, eastern IA, MO, central TN, western NC, to the mid-Atlantic states.

Family Name <i>Scientific Name</i>	Common Name	Habitat and Native Range <sup>1,2</sup>
<b>Betulaceae – birch family</b>		
<i>Betula alleghaniensis</i> Britt.	Yellow birch.	Cool, moist, well-drained uplands. Medium drought tolerance; intermediate shade tolerance. NF, NS, NB, to southern Ont., southeastern Man., MN, northeastern IA, northern IL, OH, PA, in the Appalachian Mts., eastern TN, northeastern GA, NJ, to New England.
<i>Betula lenta</i> L.	Sweet birch, black birch, cherry birch.	Deep, moist soils, or dry ridgetops. Medium drought tolerance; shade intolerant. Southern ME, to southern Que., southeastern Ont., eastern OH, Appalachian Mts., to northern AL, GA, to NJ.
<i>Betula nigra</i> L.	River birch, red birch, water birch, black birch.	Low elevations along streambanks and wet areas. Low drought tolerance; shade intolerant. Eastern TX, to southeastern IA, southern MN, central WI, northwestern IN, to VA, and northern FL.
<i>Betula papyrifera</i> Marsh.	Paper birch, canoe birch, white birch, silver birch.	Moist, well-drained upland soils and burned or logged lands. Low drought tolerance; shade intolerant. Northern and northeastern US, throughout Can., and AK
<i>Carpinus caroliniana</i> Walt.	American hornbeam, blue-beech, musclewood, ironwood, water- beech.	Moist to dry soils and in the understory. Low drought tolerance; shade tolerant. New England, to southwest Que., southeast Ont., north-central MN, south to eastern TX, northern FL, to southern ME.
<i>Ostrya virginiana</i> (Mill.) K. Koch	Eastern hophornbeam, American hophornbeam, ironwood, hornbeam, leverwood.	From streambanks to dry rocky slopes. Medium drought tolerance; shade tolerant. Cape Breton and PE Island, to southern Ont., southeastern Man., south into ND, the Black Hills of SD, eastern NE, KS, OK, and TX, to northwestern FL.
<b>Bignoniaceae – bignonia family</b>		
<i>Catalpa speciosa</i> Warder ex Engelm.	Northern catalpa, hardy catalpa, cigartree, Indian-bean.	Moist bottomlands. Medium drought tolerance; shade intolerant. Southwestern IN and IL, to southern MO and western TN.





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<b>Cornaceae – dogwood family</b>		
<i>Cornus florida</i> L.	Flowering dogwood, dogwood, cornel.	Rich, well-drained soils, in the understory. Medium drought tolerance; shade tolerant. Southwestern ME, to southern Ont., central MI, IL, and MO, southeast KS, eastern OK, east TX, and east to north FL.
<b>Ebenaceae – ebony family</b>		
<i>Diospyros virginiana</i> L.	Common persimmon, simmon, possumwood, Florida persimmon.	Dry to moist sites, sandy woodlands, river bottoms, rocky hillsides. Medium drought tolerance; shade tolerant. Southern CT, west through central PA, southern OH and IN, central IL, to southeast IA, eastern KS, OK, and TX, east to southern FL.
<b>Ericaceae – heath family</b>		
<i>Oxydendrum arboreum</i> (L.) DC.	Sourwood, sorrel-tree, lily-of-the-valley tree.	Moist uplands, acid soils, to dry ridgetops. High drought tolerance; shade tolerant. Southwest PA, to southern OH and IN, southeastern LA, coastal MS, AL, northwest FL, northern GA and SC, NC, and VA.
<b>Fabaceae – bean, pea family</b>		
<i>Cercis canadensis</i> L.	Eastern redbud, Judas-tree, redbud.	Moist, well-drained sites, in the understory. High drought tolerance; shade intolerant. NJ, southern PA and MI, to southeastern NE, central TX, and east to central FL.
<i>Cladrastis kentukea</i> (Dum.-Cours.) Rudd	Yellowwood, virgilia.	Rich, moist slopes. Medium drought tolerance; intermediate shade tolerance. Western NC, to central TN, northern AL, KY, southern IL and IN.
<i>Gleditsia aquatica</i> Marsh.	Waterlocust.	Floodplain sites. SC, to central FL, west to TX, north to southern IL.
<i>Gleditsia triacanthos</i> L.	Honeylocust, sweet-locust, thorny-locust.	Moist to dry sites, and on limestone soils. High drought tolerance; shade intolerant. Central PA, to southeastern SD, central and southeastern TX, east to southern AL, then northeasterly to western MD.
<i>Gymnocladus dioica</i> (L.) K. Koch	Kentucky coffeetree, coffeetree.	Rich bottomlands and old fields. Drought tolerant; shade intolerant. NY, PA, west to MN, NE, south to OK, east to KY, and TN.

Family Name Scientific Name	Common Name	Habitat and Native Range <sup>1, 2</sup>
<i>Robinia pseudoacacia</i> L.	Black locust, yellow locust, locust.	Rich, moist, limestone soils, and dry slopes. High drought tolerance; shade intolerant. Central PA, southern OH, south to northeastern AL, northern GA, northwestern SC, western NC, and VA.
<b>Fagaceae – beech, oak family</b>		
<i>Castanea dentata</i> (Marsh.) Borkh.	American chestnut, chestnut.	Wide range of well-drained soils. Medium drought tolerance; intermediate shade tolerance. Southern ME to MI, south to MS, and AL.
<i>Fagus grandifolia</i> Ehrh.	American beech.	Cool, moist bottomland sites. High drought tolerance; shade tolerant. Cape Breton Island, NS, ME, to southern Que. and Ont., northern MI, eastern WI, southern IL, southeastern MO, northwestern AR, southeastern OK, eastern TX, east to northern FL, and northeastward.
<i>Quercus alba</i> L.	White oak.	Upland sites, but not on dry sites. Medium drought tolerance; intermediate shade tolerance. Southwestern ME, to southern Que. and Ont., central MI, southeastern MN, south to western IA, eastern KS, OK, and TX, east to northern FL, and GA.
<i>Quercus bicolor</i> Willd.	Swamp white oak.	Moist bottomlands or upland wet sites. Low drought tolerance; intermediate shade tolerance. Southwestern ME, NY, southern Que., southern Ont., to central MI, northern WI, southeastern MN, IA, MO, KY, TN, VA, NJ, and scattered in NC and KS.
<i>Quercus coccinea</i> Muenchh.	Scarlet oak, black oak, red oak, Spanish oak.	Dry slopes or upland ridges. Medium drought tolerance; shade intolerant. Southwestern ME, NY, OH, southern MI, IN, southern IL, southeastern MO, to central MS, southern AL, southwestern GA, and north along the coastal plain to VA.
<i>Quercus ellipsoidalis</i> E.J. Hill	Northern pin oak, upland pin oak, Hill's oak.	Well-drained, upland, dry, sandy or clay soils. Drought tolerant; shade tolerant. Southern MI, to Man., MN, and northern MO.





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<i>Quercus falcata</i> Michx. var. <i>falcata</i>	Southern red oak, Spanish oak, red oak, water oak.	Dry uplands, rarely bottomlands. High drought tolerance; intermediate shade tolerance. NY, NJ, to northern FL, west in the Gulf States to eastern TX, north to eastern OK, AR, southern MO, IL, and OH, and western VA.
<i>Quercus falcata</i> var. <i>pagodifolia</i> Ell.	Cherrybark oak, bottomland red oak, swamp red oak, swamp Spanish oak, Elliott oak.	Bottomlands and moist uplands. Low drought tolerance; shade intolerant. Southeastern VA, to northwestern FL, to eastern TX, north in the MS valley, to southeastern OK and MO, southern IL, and southwestern IN.
<i>Quercus imbricaria</i> Michx.	Shingle oak, laurel oak.	Moist uplands and creeksides. Medium drought tolerance; shade intolerant. NJ, west to WI, IA, NE, and Kansas, east from AR to SC.
<i>Quercus lyrata</i> Walt.	Overcup oak, swamp post oak, swamp white oak, water white oak.	Poorly drained, clay sites in bottomlands, and swamps. Not drought tolerant; intermediate shade tolerance. Coastal plain from DE and MD, south to GA, northwestern FL, to eastern TX, north in the MS valley to southeastern OK and MO, southern IL, southwestern IN, and western KY.
<i>Quercus macrocarpa</i> Michx.	Bur oak, blue oak, mossycup oak, mossy- overcup oak, scrub oak.	Dry ridges to upland depressions; bottomlands. High drought tolerance; intermediate shade tolerance. Southern NB, central ME, VT, to southern Que., Ont., and Man., southeastern Sask., ND, southeastern MT, northeastern WY, SD, central NE, western OK southeastern TX, to AR, central TN, WV, MD, PA, and CT.
<i>Quercus marilandica</i> Muenchh.	Blackjack oak, blackjack, jack oak.	Dry, infertile soils. High drought tolerance; shade intolerant. Southern NY and NJ, west to IA, south to TX, east to FL.
<i>Quercus michauxii</i> Nutt.	Swamp chestnut oak, basket oak, cow oak.	Bottomlands and moist uplands. Low drought tolerance; shade intolerant. Atlantic coastal plain from NJ, eastern PA, south to northern FL, to east TX, north in the MS river valley, to southeast OK, AR, southeastern MO, southern IL and IN, southeast KY, and eastern TN.

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<i>Quercus muehlenbergii</i> Engelm.	Chinkapin oak, chestnut oak, rock oak, yellow chestnut oak, yellow oak.	Alkaline soils, well-drained, dry slopes. High drought tolerance; shade intolerant. Western VT, NY, to southern Ont., MI, and WI, southeastern MN and IA, to southeastern NE, eastern KS, western OK, central TX, to northwest FL, and north to PA and southwestern MA.
<i>Quercus nigra</i> L.	Water oak, possum oak, spotted oak.	Moist bottomlands to well-drained uplands. Low drought tolerance; shade intolerant. Coastal plain from southern NJ and DE, to southern FL, to eastern TX, north in the MS valley to southeastern OK, AR, and MO, and southwestern TN.
<i>Quercus nuttallii</i> Palmer	Nuttall oak, red oak, pin oak, Red River oak.	Common on wet soils of floodplains. Not drought tolerant; shade intolerant. FL, west to southeastern TX, north in the MS valley, AR, southeastern OK and MO, and western TN.
<i>Quercus palustris</i> Muenchh.	Pin oak, swamp oak, water oak, swamp Spanish oak.	Bottomlands, moist uplands, wet clay soils. Low drought tolerance; shade intolerant. Southwestern New England, to southern Ont. and MI, northern IL, to southeastern IA, MO, eastern KS, northeastern OK, to central AR, TN, central NC, and VA.
<i>Quercus phellos</i> L.	Willow oak, peach oak, swamp chestnut oak.	Rich bottomlands. Not drought tolerant; shade intolerant. NJ, to southeastern PA to GA, and northern FL, to eastern TX, north in the MS valley, southeastern OK, AR, southeastern MO, southern IL and KY, and western TN.
<i>Quercus prinus</i> L.	Chestnut oak, rock chestnut oak, rock oak.	Dry, rocky slopes or ridges, well-drained soils. Medium drought tolerance; intermediate shade tolerance. Southwestern ME, NY, to southern Ont., southeastern MI, southern IN and IL, to northeastern MS, east to central AL, GA, mountains of SC and NC, TN, and north to DE.
<i>Quercus rubra</i> L.	Northern red oak, common red oak, eastern red oak, mountain red oak, gray oak.	Cool, moist upland sites. Medium drought tolerance; intermediate shade tolerance. Cape Breton Island, NS, PE Island, NB, Que., Ont., MN, to eastern NE and OK, AR, southern AL, GA, and NC.





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<i>Quercus shumardii</i> Buckl.	Shumard oak, spotted oak, Schneck oak, Shumard red oak, southern red oak, swamp red oak.	Moist, well-drained bottomlands, streambanks, and moist uplands. High drought tolerance; shade intolerant. NC, to northern FL, central TX, north in the MS river valley, central OK, eastern KS, MO, to southern IL, IN, southern MI, western and southern OH, southern PA, MD, KY, and TN.
<i>Quercus stellata</i> Wangeh.	Post oak, iron oak.	Dry, sandy sites. High drought tolerance; shade intolerant. Southeastern MA, RI, southern CT, southeastern NY, to southeastern PA and WV, central OH, southern IN, central IL, southeastern IA, MO, eastern KS, western OK, northwestern and central TX, to central FL.
<i>Quercus velutina</i> Lam.	Black oak, yellow oak, quercitron, smoothbark oak.	Moist, rich, well-drained soils to dry ridges. High drought tolerance; intermediate shade tolerance. Southwestern ME, NY, to southern Ont., southeastern MN and IA, eastern NE, eastern KS, central OK, eastern TX, to northwestern FL, and GA.
<b>Hamamelidaceae – witch hazel family</b>		
<i>Liquidambar styraciflua</i> L.	Sweetgum, redgum, saggum, starleaf-gum, bilsted.	A variety of sites, but most often on bottomlands. Low drought tolerance; shade intolerant. CT, south to central FL, to eastern TX, southeastern OK, AR, southeastern MO, southern IL, IN, and OH.
<b>Hippocastanaceae – buckeye family</b>		
<i>Aesculus glabra</i> Willd.	Ohio buckeye, American buckeye, fetid buckeye, stinking buckeye.	Moist, rich soils and river bottoms. Medium drought tolerance; shade tolerant. Western PA, OH, southern MI, to IL, and central IA, south to eastern KS, southwestern OK, central TX, to western AR, TN, and central AL.
<i>Aesculus octandra</i> Marsh.	Yellow buckeye, sweet buckeye, big buckeye.	Rich, moist, humus sites with good drainage. Low drought tolerance; shade tolerant. Southwestern PA, to the OH river valley, to southeastern IL, KY, central TN, northern AL, northern GA, northwestern SC, to western VA and WV.

Family Name <i>Scientific Name</i>	Common Name	Habitat and Native Range <sup>1, 2</sup>
<b>Juglandaceae – hickory, pecan, walnut family</b>		
<i>Carya aquatica</i> (Michx. f.) Nutt.	Water hickory, swamp hickory, bitter pecan.	Floodplain soils, near streams and rivers. Medium drought tolerance; intermediate shade tolerance. Southeastern VA, to southern FL, to eastern TX, and the MS valley, north to southern IL.
<i>Carya cordiformis</i> (Wangenh.) K. Koch	Bitternut hickory, bitternut, pignut, swamp hickory.	Moist, deep soils along streams and mountain valleys. High drought tolerance; shade intolerant. Southwestern NH, VT, ME, to southern Que. and Ont., central MI, northern MN, to eastern TX, to northwestern FL, and GA.
<i>Carya glabra</i> (Mill.) Sweet	Pignut hickory, pignut, sweet pignut, coast pignut hickory, smoothbark hickory, swamp hickory, broom hickory.	Moist, upland forests and dry ridges. High drought tolerance; intermediate shade tolerance. Nearly all of the eastern US.
<i>Carya illinoensis</i> (Wangenh.) K. Koch	Pecan, sweet pecan.	Rich, moist well-drained soils. Low drought tolerance; shade intolerant. Lower MS valley, to eastern KS, central TX, to western MS and TN, and sparsely in southwestern OH to KY, and AL.
<i>Carya laciniosa</i> (Michx. f.) Loud.	Shellbark hickory, shagbark hickory, kingnut; thick, bottom, or western shellbark.	Bottomland and moist upland sites. Low drought tolerance; shade tolerant. Western NY, through southern MI, southeast IA, eastern KS, northern OK, east through TN and PA.
<i>Carya ovata</i> (Mill.) K. Koch	Shagbark hickory, scalybark hickory, shellbark hickory, upland hickory.	Upland and bottomland sites. Medium drought tolerance; intermediate shade tolerance. Southeastern NE, to southeastern MN, through southern Ont. and Que., to southern ME, to GA, AL, MS, LA, and eastern TX.
<i>Carya pallida</i> (Ashe) Engl. & Graebn.	Sand hickory, pale hickory.	Dry, sandy or rocky soils. Medium drought tolerance; intermediate shade tolerance. Coast of VA and NC, through northern SC and GA, into TN, AL, and MS.
<i>Carya texana</i> Buckl.	Black hickory.	Dry, sandy or rocky soils, or heavy clays. Medium drought tolerance; intermediate shade tolerance. LA, eastern TX, north to southern IN, IL, MO, and eastern OK.



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<i>Carya tomentosa</i> (Poir.) Nutt.	Mockernut hickory, white hickory, mockernut, whiteheart hickory, hognut, bullnut.	Dry upland sites, deep, fertile soils. Medium drought tolerance; shade intolerant. MA, NY, to southern Ont., southern MI, northern IL, to southeastern IA, MO, eastern KS, to eastern TX, east to northern FL.
<i>Juglans cinerea</i> L.	Butternut, white walnut, oilnut.	Bottomlands, moist uplands, well-drained sites. Low drought tolerance; shade intolerant. Southeastern NB, to southern Ont. and Que., southeastern MN, south to northern AR, east to northern GA, and western SC.
<i>Juglans nigra</i> L.	Black walnut, eastern black walnut, American walnut.	Deep, moist, fertile bottomlands and uplands. Low drought tolerance; shade intolerant. Western VT, MA, NY, to southern Ont., central MI, southern MN, eastern SD, northeastern NE, to western OK, central TX, and east to northwestern FL, and GA.
<b>Lauraceae – laurel family</b>		
<i>Sassafras albidum</i> (Nutt.) Nees	Sassafras, white sassafras.	Moist, well-drained sandy soils, bottomlands, dry ridges. High drought tolerance; shade intolerant. Southwestern ME, NY, to southern Ont., central MI, IL, southeastern IA, MO, southeastern KS, eastern OK and TX, to central FL.
<b>Magnoliaceae – magnolia family</b>		
<i>Liriodendron tulipifera</i> L.	Yellow-poplar, tuliptree, tulip-poplar, white-poplar, whitewood.	Deep, rich, moist, well-drained, cool sites. Medium drought tolerance; shade intolerant. Southern New England, through southern Ont. and MI, south to LA, then east to north-central FL.
<i>Magnolia acuminata</i> L.	Cucumbertree, cucumber magnolia, yellow cucumbertree, yellow-flower magnolia, mountain magnolia.	Moist soils. Not drought tolerant; intermediate shade tolerance. Western NY, southern Ont., southwest to OH, southern IN, IL, MO, to southeastern OK, LA, to northwest FL, and central GA.
<i>Magnolia fraseri</i> Walt.	Fraser magnolia, mountain magnolia, earleaf cucumbertree, umbrella-tree.	Rich, cool, moist sites, on slopes and in coves. Low drought tolerance; intermediate shade tolerance. Eastern WV, western VA, southern Appalachians of east TN, southeastern KY, western NC, northwestern SC, and northeast GA.
<i>Magnolia macrophylla</i> Michx.	Bigleaf magnolia, silverleaf magnolia.	Moist sites in mountains, occasionally dry ridges. KY, to FL, west to LA, north to AR.



Family Name <i>Scientific Name</i>	Common Name	Habitat and Native Range <sup>1,2</sup>
<i>Magnolia tripetala</i> L.	Umbrella magnolia, elkwood.	Moist woodlands and streamsides. Low drought tolerance; shade tolerant. Coastal plain and Piedmont, from VA to GA, and infrequent in the Appalachian Mts.
<b>Moraceae – mulberry family</b>		
<i>Maclura pomifera</i> (Raf.) Schneid.	Osage-orange, hedge, hedge-apple, bodark, bowwood.	Bottomlands. Medium drought tolerance; shade intolerant. Red River drainage of OK, AR, and TX.
<i>Morus rubra</i> L.	Red mulberry, moral.	Moist woodlands and hillsides. Medium drought tolerance; shade tolerant. MA, southern VT, through southern NY, Ont., and MI, central WI, southeastern MN, to IA, southeastern NE, central KS, western OK, central TX, and east to southern FL.
<b>Nyssaceae – gum family</b>		
<i>Nyssa aquatica</i> L.	Water tupelo, tupelo-gum, cotton-gum, sourgum, swamp tupelo, water-gum.	Floodplain soils; low, wet flats. Not drought tolerant; shade intolerant. Throughout the coastal plain, southeastern VA, to southern GA, from northwestern FL to southeastern TX, up the MS river valley to southern IL.
<i>Nyssa sylvatica</i> Marsh.	Blackgum, black tupelo, pepperidge, tupelo, sourgum.	Variety of well-drained sites. Medium drought tolerance; shade tolerant. Southwestern ME, NY, to southern Ont., central MI, IL, central MO, to eastern OK and TX, and to southern FL.
<b>Oleaceae – olive family</b>		
<i>Fraxinus americana</i> L.	White ash, ash, Biltmore ash, Biltmore white ash.	Rich, moist, well-drained to dry uplands. Low drought tolerance; intermediate shade tolerance. Cape Breton Island, NS, to northern FL in the east, to eastern MN, south to eastern TX.
<i>Fraxinus nigra</i> Marsh.	Black ash, swamp ash, basket ash, hoop ash, brown ash, water ash.	Cold, wet, poorly drained soils, swamps, and streamsides. Low drought tolerance; shade intolerant. Western NF, to southeastern Man., eastern ND, south to IA, to southern IN, OH, and WV, northern VA, to DE, and NJ.
<i>Fraxinus pennsylvanica</i> Marsh.	Green ash, swamp ash, red ash, water ash.	Wet sites along streambanks, bottomland. Medium drought tolerance; shade tolerant. Cape Breton Island, NS, to southeastern Alta., south through central MT, northeastern WY, to southeastern TX, and east to northwestern FL and GA.





Family Name <i>Scientific Name</i>	Common Name	Habitat and Native Range <sup>1, 2</sup>
<i>Fraxinus profunda</i> (Bush) Bush	Pumpkin ash, red ash.	Floodplain soils. Low drought tolerance; intermediate shade tolerance. Atlantic coastal plain from southern MD, southeastern VA, to northern FL, west to LA, MS and OH river valleys from southern IL and IN, south through southeastern MO, and northeastern AR.
<i>Fraxinus quadrangulata</i> Michx.	Blue ash.	Dry upland sites. Medium drought tolerance; shade intolerant. Ont., to IA, south OK, east to central TN.
<b>Platanaceae – sycamore family</b>		
<i>Platanus occidentalis</i> L.	Sycamore, American sycamore, American planetree, buttonwood.	Bottomlands and along streams. Low drought tolerance; intermediate shade tolerance. Southwestern ME, NY, southern Ont., central MI, southern WI, south to IA, eastern NE, eastern KS, OK, south-central TX, east to northwestern FL, and southeastern GA.
<b>Rosaceae – rose family</b>		
<i>Malus angustifolia</i> (Ait.) Michx.	Southern crab apple, narrow-leaf crab, wild crab.	A variety of sites, but best on well-drained, moist, acid soils. Shade intolerant. Washington, DC, south to northern FL, west to LA, and AR.
<i>Prunus pensylvanica</i> L. f.	Pin cherry, fire cherry, bird cherry, northern pin cherry, wild red cherry, pigeon cherry.	Moist sites, sandy plains, disturbed sites. Low drought tolerance; shade intolerant. NF and Lab., west to southern BC, scattered in the Rocky Mts. to MT and CO, southeastward from the Black Hills of SD to IA, IL, PA, NJ, to New England, and in the Appalachian Mts. south to northern GA and eastern TN.
<i>Prunus serotina</i> Ehrh.	Black cherry, wild black cherry, rum cherry, mountain black cherry.	Moist, cool sites. Medium drought tolerance; intermediate shade tolerance. NS, NB, west to southern Que. and Ont., MI, eastern MN, south to IA, eastern NE, OK, and TX, east to central FL.
<i>Prunus virginiana</i> L.	Chokecherry, eastern chokecherry.	Streambanks, moist sites. Medium drought tolerance; shade intolerant. NF, to BC, south to southern CA, NM, KS, IL, MD, and southern mountains to GA.

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<i>Sorbus americana</i> Marsh.	American mountain-ash.	Near swamps, on rocky soils, and mountain slopes. Low drought tolerance; intermediate shade tolerance. Southern Appalachian Mts., northwest to Man., northeast to southern Lab. and NF.
<b>Salicaceae – willow family</b>		
<i>Populus balsamifera</i> L.	Balsam poplar, balm, tacamahac, cottonwood, heartleaf balsam poplar.	Moist to wet soils, floodplains. Low drought tolerance; shade intolerant. Northern US, throughout Can., and AK.
<i>Populus deltoides</i> Bartr. ex Marsh.	Eastern cottonwood, cottonwood, Carolina poplar, eastern poplar, necklace poplar.	Floodplain soils, moist sandy sites. Low drought tolerance; shade intolerant. Southern Que., west to ND, southwestern Man., south to central TX, east to northwestern FL.
<i>Populus grandidentata</i> Michx.	Bigtoothaspens, largetooth aspen, poplar, popple.	Sandy uplands, streambanks, to dry hillsides. Low drought tolerance; shade intolerant. Cape Breton Island, NS, to southwestern Que., southeastern Ont., southeastern Man., to MN, IA, northeastern MO, southern IL, KY, VA, DE, western NC, and northwestern TN.
<i>Populus heterophylla</i> L.	Swamp cottonwood, swamp poplar, black cottonwood, river cottonwood, downy poplar.	Bottomland swamps. Low drought tolerance; shade intolerant. Coastal plain from CT and southeastern NY, to GA, northwestern FL, west to LA, in MS valley to southeastern MO, western TN, KY, southern IL, IN, OH, and southern MI.
<i>Populus tremuloides</i> Michx.	Quaking aspen, trembling aspen, golden aspen, mountain aspen, trembling poplar.	Sandy and gravelly slopes, disturbed sites. Low drought tolerance; shade intolerant. NF and Lab., west across Can., to northwestern AK, southeast through Yukon and BC, WA, to CA, southern AZ, TX, northern NE, from IA and eastern MO, east to WV, western VA, PA, and NJ.
<i>Salix nigra</i> Marsh.	Black willow, swamp willow, southwestern black willow, Dudley willow, Goodding willow.	Wet sites. Low drought tolerance; shade intolerant. Southern NB, central ME, west in Que., southern Ont., central MI, to southeastern MN, south and west to the Rio Grande, along gulf coast, FL panhandle, and southern GA.





Family Name <i>Scientific Name</i>	Common Name	Habitat and Native Range <sup>1,2</sup>
<b>Styracaceae – snowbell family</b>		
<i>Halesia carolina</i> L.	Carolina silverbell, snowdrop-tree, opossum-wood.	Moist wooded slopes and streambanks. Low drought tolerance; shade tolerant. Piedmont and Mts. of the Carolinas, eastern TN, GA, AL, scattered in southeastern coastal plain, western VA, WV, southern OH, IN, and IL, KY, TN, central AR, southeastern OK.
<b>Tiliaceae – basswood family</b>		
<i>Tilia americana</i> L.	American basswood, American linden, bee-tree.	Rich, moist soils. Medium drought tolerance; shade tolerant. Southwestern NB and New England, west in Que. and Ont., to southeast Man., south to eastern ND, SD, NE, KS, northeastern OK, east to northern AR, TN, western NC, and northeast to NJ.
<i>Tilia heterophylla</i> Vent.	White basswood, linden, bee-tree linden.	Lower slopes of mountains on moist, but well-drained soils. Low drought tolerance; shade tolerant. Southwestern PA, to southern OH, IN, and IL, MO, northern AR, east to northeastern MS, AL, northwestern FL, GA, and north to MD.
<b>Ulmaceae – elm family</b>		
<i>Celtis laevigata</i> Willd.	Sugarberry, sugar hackberry, southern hackberry, Texas sugarberry.	Moist bottomlands, deep moist sites. Low drought tolerance; shade tolerant. Southeastern VA, to southern FL, west to central TX, north to western OK, southern KS, MO, southern IL and IN, and western KY.
<i>Celtis occidentalis</i> L.	Hackberry, nettletree, beaverwood, northern hackberry, American hackberry, sugarberry.	Moist woodlands and bottomlands. High drought tolerance; intermediate shade tolerance. Southern New England, central NY, west to southern Ont., to ND, SD, western NE, northeastern CO, northwestern TX, east to AR, TN, NC, scattered in MS, AL, and GA.
<i>Planera aquatica</i> J.F. Gmel.	Water elm, planertree.	Wet soils. Low drought tolerance; shade tolerant. Southeastern NC, to northern FL, west to eastern TX, north to southern IL.
<i>Ulmus alata</i> Michx.	Winged elm, cork elm, wahoo.	Fertile soils with adequate moisture and drainage. Low drought tolerance; shade tolerant. Southern VA, west to KY, southern IN and IL, central MO, south to central OK, southeastern TX, east to central FL, and locally in MD.

Family Name <i>Scientific Name</i>	Common Name	Habitat and Native Range <sup>1, 2</sup>
<i>Ulmus americana</i> L.	American elm, white elm, soft elm.	Moist upland and bottomland sites. Medium drought tolerance; intermediate shade tolerance. Cape Breton Island, NS, west to central Ont., southern Man., southeastern Sask., south to eastern MT, northeastern WY, western NE, KS, OK, central TX, east to central FL, and north along the east coast.
<i>Ulmus crassifolia</i> Nutt.	Cedar elm, basket elm, red elm, southern rock elm.	Moist, limestone soils; bottomlands. Medium drought tolerance; intermediate shade tolerance. Southwestern TN, AR, eastern and southern OK, south to central and southern TX, east to LA, and western MS
<i>Ulmus rubra</i> Muhl.	Slippery elm, red elm, soft elm, gray elm.	Moist, rich soils; upland or bottomland sites. Medium drought tolerance; shade tolerant. Southwestern ME, NY, to southern Que. and Ont., northern MI, central MN, eastern ND, south to eastern SD, central NE, southwestern OK, central TX, east to northwestern FL, and GA
<i>Ulmus serotina</i> Sarg.	September elm, red elm.	Moist clay or sandy loam soils, limestone hills and riverbanks. Medium drought tolerance; shade tolerant. Scattered from southern IL, across KY, TN, to northern GA, AL, and MS, AR, TN, and eastern OK.
<i>Ulmus thomasii</i> Sarg.	Rock elm, cork elm.	Moist, loamy soils; upland sites, ridges, and limestone outcrops. Low drought tolerance; intermediate shade tolerance. Portions of NH, VT, NY, southern Que., to Ont., MI, northern MN, south to southeastern SD, northeastern KS, northern AR, east to TN, southwestern VA and PA, and northern NJ.



<sup>1</sup>Excerpted from Burns, R.M. and B.H. Honkala (tech. coords.). 1990. *Silvics of North America: 2. Hardwoods*. Agriculture Handbook 654. U.S. Department of Agriculture, Forest Service, Washington, DC, 877p.; and Leopold, D.J., W.C. McComb, and R.N. Muller. 1998. *Trees of the Central Hardwood Forests of North America: An Identification and Cultivation Guide*, Timber Press, Inc., Portland, OR, 469 p.

<sup>2</sup>Abbreviations used: Alabama (AL); Alaska (AK); Alberta (Alta.); Arizona (AZ); Arkansas (AR); British Columbia (BC); California (CA); Canada (Can.); Colorado (CO); Connecticut (CT); Delaware (DE); Florida (FL); Georgia (GA); Illinois (IL); Indiana (IN); Iowa (IA); Kansas (KS); Kentucky (KY); Labrador (Lab.); Louisiana (LA); Maine (ME); Manitoba (Man.); Maryland (MD); Massachusetts (MA); Michigan (MI); Minnesota (MN); Mississippi (MS); Missouri (MO); Montana (MT); Mountains (Mts.); Nebraska (NE); New Brunswick (NB); Newfoundland (NF); New Hampshire (NH); New Jersey (NJ); New Mexico (NM); New York (NY); North Carolina (NC); North Dakota (ND); Nova Scotia (NS); Ohio (OH); Oklahoma (OK); Ontario (Ont.); Pennsylvania (PA); Prince Edward (PE); Quebec (Que.); Rhode Island (RI); Saskatchewan (Sask.); South Carolina (SC); South Dakota (SD); Tennessee (TN); Texas (TX); United States (US); Vermont (VT); Virginia (VA); Washington (WA); West Virginia (WV); Wisconsin (WI); and Wyoming (WY).

## Other Resources

Indiana Natural Resources Conservation Service (Indiana NRCS). (<http://www.in.nrcs.usda.gov>)

USDA-NRCS. 2003. The PLANTS Database. (<http://plants.usda.gov>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

USDA. NRCS. 2003. Technical Information, Resources, Tools, Models, and Data (conservation practices, forestry and agroforestry, invasive species, soils, etc.). (<http://www.nrcs.usda.gov/technical/>)

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