

Seedling Order Form

GEORGE O. WHITE STATE FOREST NURSERY

2023-2024



Buttonbush



Serving nature and you

Plan Ahead and Order Early!

Although we accept orders from Sept. 1, 2023, through April 15, 2024, we always sell out of some species quickly. To get the plants you want, please send your order as soon as possible. Some species are in short supply and will only be made available online. Check out our online catalog at mdc.mo.gov/seedlings for all available seedlings. **You can place your order online starting Sept. 1, 2023.**

Contact Information

George O. White State Forest Nursery
Missouri Department of Conservation
14027 Shafer Road
PO Box 119
Licking, MO 65542
573-674-3229
Fax: 573-674-4047

Three Ways to Order

Submit orders by internet, mail, or fax. **We do not accept phone orders.** If you order by mail or fax, **do not send payment with your order.**

Mark Your Calendars

The George O. White State Forest Nursery hits a milestone in 2024 — its 90th anniversary. We invite you to help us celebrate by coming to our open house. Come see how we grow, store, process, and ship millions of seedlings annually. This year's open house will be held from 9 a.m. to 2 p.m. April 6, 2024. Due to limited capacity, we can only accommodate 300 people, so call 573-674-3229, ext. 0 to make a reservation. To help reduce waiting, you will be assigned a tour time when you register. Please come early to visit a variety of booths, participate in kids' crafts, fish at the lake, and watch a portable sawmill operate. These will only be available until 4 p.m. MDC staff will be available to answer questions about tree issues, forestry, conservation, and more. Smokey Bear plans to make some appearances as well. When you register, we will need your name, phone number, and how many will be in your group.



Cost

Prices range from \$0.34 to \$1.00 per seedling. See pricing chart below. Sales tax will be added to all orders unless you provide a tax-exemption certificate. A \$9 handling charge is added to each order, no matter the number of seedlings. Now, due to rising shipping costs, in-state shipping cost is \$15 per 100 seedlings with a \$15 minimum charge. Out-of-state shipping is \$20 per 100 seedlings with a \$20 minimum charge.

Price per Seedling			
Species	Available in 10 only	Available in increments of 25	
		25-75	100+
Eastern white pine 2-0, Shortleaf pine, Loblolly pine, Pitch x loblolly pine	\$0.70	\$0.38	\$0.34
Norway spruce, Eastern red cedar, and Bald cypress	\$1.00	\$0.60	\$0.50
Hardwood trees and shrubs	\$1.00	\$0.60	\$0.50
<i>Orders of multiple species of 10s or 25s cannot be combined for volume discount.</i>			

Billing Card

After we process your order, we'll send you a billing card by mail or email. You should receive it within two weeks of submitting your order. If you do not receive a billing card, call 573-674-3229. Check your billing card when you get it. It will show the species available for pick up or delivery, the price per each bundle, and the total amount charged for your order. **If a species is sold out when we receive your order, we will not bill you for that species.** If the sold-out seedlings become available later, we will try to notify you if time allows.

Reallocation Letter

If you receive a reallocation letter, call as soon as you get it if you want to add the seedlings to your order. We reallocate on a first come, first served basis as long as the seedlings last. We do not automatically add them to your order. You must call the nursery and tell us you still want them, 573-674-3229.

If you submit an order by mail, fax, or via the internet, you should receive a billing card from us within about two weeks. If you DO NOT receive a billing card from us, call the nursery at 573-674-3229 to inquire about the status of your order.



American beautyberry

Payment

The billing card will have a due date, as well as information on how to pay for your seedlings. We accept check, money order, Visa, MasterCard, and Discover. *(A convenience fee for any credit/debit card transaction is collected by a third-party vendor, not the Missouri Department of Conservation.)* Please write your order number on your check. **All orders must be paid in full before they can be shipped or picked up.** If payment is not received within 30 days of the date the order was placed, the order will be canceled.

Permit Card/Conservation ID Discount

The Conservation Permit Card replaces the old Heritage Card and is used as a single source for hunter education verification, permits purchased, and permit verification. If you lose your Hunter Education card, you can purchase the Permit Card to replace it if your hunter education certification can be verified through department records. The Heritage Card will remain valid, but in order for it to be carried in lieu of paper or electronic permits, the Permit Card must be possessed. With your Permit Card or Conservation ID number, you can receive a 15 percent discount, up to \$20, off your seedling order. The Permit Card costs \$2 and does not expire.

You can purchase a Permit Card online at mdc.mo.gov/buypermits, at a conservation service center, from a retail permit vendor, or by calling 800-392-4115. The card will be mailed to the address on file. It should arrive within four to six weeks of purchase.

Order Changes and Refunds

To request an order change, contact the nursery, or if you have created a user profile online, please login and make appropriate changes. Changes need to be made no later than three weeks before your ship/pick up date. Adjustments or refunds will be made only at the discretion of the nursery. No refunds on orders canceled after April 1, 2024. No refund of \$2.50 or less will be made. Please notify us promptly of any address change and include your order number. Once shipped, seedlings are nonrefundable.

Delivery

You can have your trees shipped, or you can pick them up at the nursery. **Allow a minimum of 3 weeks notice if you need to change your shipping date and/or address.** Please select the delivery month and the week you want your trees delivered. We will ship orders late February through early May. Most orders arrive within 48 hours after they leave the nursery, but this cannot be guaranteed. If any or all of your order has not arrived within seven days of your selected delivery date, please contact the nursery. Some states have quarantines on incoming plants. It is the customers' responsibility to check for any type of quarantine that may be in place.

If an address is sent in or entered incorrectly by the customer and the seedlings have to be re-shipped, the customer must pay for the second shipping.

Seedlings

We provide mainly 1-year-old bare-root seedlings. A few species are 2 years old, and they are noted as 2-0 in the pricing chart. The size of the seedlings varies greatly depending on the species, but mainly range from 6 to 22 inches. Seedlings are provided in a minimum quantity of 10 or any increment of 25 trees per species.

Spacing of Seedlings

When planting seedlings, consider their primary purpose and the height and spread to which they will eventually grow. As a general rule, seedlings should be spaced as shown below:

Purpose	Spacing
Erosion control	3–6 feet
Reforestation	8–12 feet
Wildlife shrubs	3–6 feet
Windbreaks	5–12 feet

Quantity of Seedlings per Acre	
Spacing in feet	Seedlings per acre
3x3	4,840
4x4	2,722
5x5	1,742
6x6	1,210
7x7	889
8x8	681
9x9	538
10x10	436
12x12	302
15x15	194

Conifer Species



Bald cypress



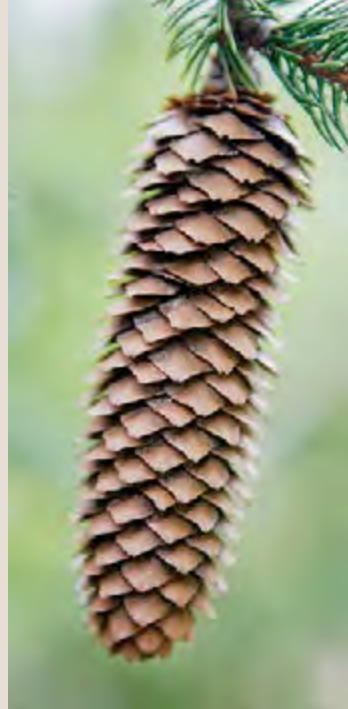
Eastern red cedar



Eastern white pine



Loblolly pine



Norway spruce



Pitch x loblolly pine



Shortleaf pine



Hardwood Species



Black walnut



Cottonwood



Hackberry



Osage orange



Shellbark hickory



Kentucky coffee tree

Price per Seedling			
Species	Available in 10 only	Available in increments of 25	
		25–75	100+
Eastern white pine 2-0, Shortleaf pine, Loblolly pine, Pitch x loblolly pine	\$0.70	\$0.38	\$0.34
Norway spruce, Eastern red cedar, and Bald cypress	\$1.00	\$0.60	\$0.50
Hardwood trees and shrubs	\$1.00	\$0.60	\$0.50
Orders of multiple species of 10s or 25s cannot be combined for volume discount.			

Species	Common Uses				Wildlife Benefits				Other Important Facts
	Wind Break	Erosion Control	Reforestation	Wetland Restoration	Food	Cover	Pollinator	Mature Height in Feet	
Conifer Species									
Bald cypress (<i>Taxodium distichum</i>)	✓	✓	✓	✓				90–100	Large trees that may live more than 1,000 years. Commonly associated with southeastern swamps, but adapt easily to a wide range of sites. Young trees grow rapidly on good sites and may reach 20 feet in height in 10 years. Extremely durable wood.
Eastern red cedar (<i>Juniperus virginiana</i>)	✓			✓	✓	✓		60	Eastern red cedar's aromatic wood is valuable for closet lining and novelties. Excellent for wildlife and windbreak plantings.
Eastern white pine* 2-0 (<i>Pinus strobus</i>) (Average size 8–10 inches)	✓		✓			✓		80–100	A tall, stately tree with an attractive conical shape and branches nearly to the ground in open stands. Makes an excellent windbreak throughout the state. Adapts to a variety of sites, but prefers moderately moist, sandy loam soils. <i>*White pine may have difficulty surviving with Missouri's dry climate and clay soils.</i>
Loblolly pine (<i>Pinus taeda</i>)	✓		✓			✓		90	Native throughout the southern United States. Introduced and grows well in southern Missouri. A fast-growing pine that is an important timber tree for lumber and pulp. Similar in appearance to shortleaf pine, but has longer needles and a larger cone. Grows on a wide variety of sites including poor, dry upland, and rich bottomland soils.
Norway spruce* (<i>Picea abies</i>)	✓					✓		50	Excellent tree for windbreak and wildlife cover. Although not immune to deer damage, deer generally leave this evergreen alone. This fast-growing spruce grows best on well-drained soils and will tolerate a lot of shade. It will retain its dense drooping branches as the tree matures. <i>*Norway spruce may have difficulty surviving with Missouri's dry climate and clay soils.</i>
Pitch x loblolly pine (<i>Pinus rigida</i> x <i>Pinus taeda</i>)	✓	✓	✓			✓		60	This hybrid pine combines the cold hardiness and drought tolerance of pitch pine with the larger mature size, moist soil tolerance, and fast growth of loblolly pine. Develops a dense, extensive root system that helps it adapt to extreme soil conditions. The long, naturally shed needles are used for pine straw mulch in the landscaping industry. Does best in full sun to partial shade.
Shortleaf pine (<i>Pinus echinata</i>)	✓		✓			✓		80–100	Only pine native to Missouri. Grows to 2–3 feet in diameter. Does very well on dry, upland sites in the Ozarks. Probably should not be planted north of the Missouri River.
Hardwood Species									
Black walnut (<i>Juglans nigra</i>)			✓	✓	✓			80–90	The “black gold” of Missouri. Valued for its lumber and nuts, it is extensively cultivated statewide. Grows rapidly on deep, rich, alluvial soils. Growth rates decline rapidly in poor soils.
Cottonwood (cuttings) (<i>Populus deltoides</i>)	✓	✓	✓	✓		✓		100	One of the largest and fastest-growing trees in the eastern United States. Grows best in deep, well-drained bottomland soils. Can reach diameters of 3–4 feet. Instructions for planting cuttings are on the back page.
Hackberry (<i>Celtis occidentalis</i>)	✓	✓	✓	✓	✓		✓	90	Common bottomland species found statewide. Does very well in prairie regions. Birds eat the fruit.
Osage orange (<i>Maclura pomifera</i>)	✓		✓		✓	✓		40–50	The familiar hedge or hedgeapple tree of Missouri's prairie regions. Hard, durable wood is used for fence posts. Has thorns.
Shellbark hickory (<i>Carya laciniosa</i>)			✓	✓	✓			90	A large scaly bark hickory that grows best on rich bottomland soils. It produces the largest nut of any hickory. Not found naturally in the Ozarks, but will grow statewide.
Kentucky coffee tree (<i>Gymnocladus dioicus</i>)	✓	✓	✓				✓	70–90	Medium to large tree preferring good soil. Found statewide, but most common in western Missouri. Large, persistent seedpods and short, heavy twigs make this legume distinctive in winter.



Black oak



Bur oak



Cherrybark oak



Chinkapin oak



Northern red oak



Nuttall's oak



Overcup oak



Pin oak



White oak



Shumard oak



Swamp chestnut oak



Swamp white oak



Willow oak



Ohio buckeye

Price per Seedling			
Species	Available in 10 only	Available in increments of 25	
		25–75	100+
Hardwood trees and shrubs	\$1.00	\$0.60	\$0.50
Orders of multiple species of 10s or 25s cannot be combined for volume discount.			

Species	Common Uses				Wildlife Benefits				Other Important Facts
	Wind Break	Erosion Control	Reforestation	Wetland Restoration	Food	Cover	Pollinator	Mature Height in Feet	
Black oak (<i>Quercus velutina</i>)			✓		✓	✓	✓	85	Found statewide, but most common in the Ozarks. Will grow on dry, poor upland sites, but grows best on well-drained soil. Good acorn producer.
Bur oak (<i>Quercus macrocarpa</i>)		✓	✓	✓	✓		✓	80	Large acorns with fringed caps are characteristic of this oak. Grows statewide on a variety of sites including dry uplands and moist lowlands. Reaches 3–4 feet in diameter.
Cherrybark oak (<i>Quercus falcata</i> var. <i>pagodifolia</i>)		✓	✓	✓	✓	✓	✓	100	Southeastern lowland oak that should be planted in Missouri Bootheel area. Prefers rich, well-drained bottomland soils. Large, fast growing, well-formed, and commercially important.
Chinkapin oak (<i>Quercus muehlenbergii</i>)			✓		✓	✓	✓	70	Found throughout Missouri mostly on dry upland woods, along bluffs, and in glades. It tolerates very dry, rocky soil, but will grow on a wide variety of sites. This tree is in the white oak group, has silver-gray bark, and long, thin leaves. The acorns are nearly black, about ¾ to 1 inch long and are a favorite food source for turkey and deer.
Northern red oak (<i>Quercus rubra</i>)	✓	✓	✓		✓	✓	✓	90	One of the most widespread and commercially important of the oaks. Found on a wide variety of sites statewide. Grows best in fertile, sandy loam soils.
Nuttall's oak (<i>Quercus texana</i>)		✓	✓	✓	✓	✓	✓	90–100	Relatively fast-growing oak that is found in the Southeastern lowlands. Does well on heavy, poorly drained clay soils. General appearance somewhat resembles pin oak. Probably should not be planted outside the Bootheel.
Overcup oak (<i>Quercus lyrata</i>)		✓	✓	✓	✓	✓	✓	70	Occurs naturally in southeastern Missouri and up the Mississippi River to St. Louis. Grows on wet, poorly drained sites and is one of the most flood-tolerant species. This slow-growing tree produces acorns that are almost enclosed in the cap.
Pin oak (<i>Quercus palustris</i>)	✓	✓	✓	✓	✓	✓	✓	70–80	This fast-growing oak grows naturally on poorly drained, heavy bottomland sites statewide. It is often used for landscaping as it will grow well on a wide variety of sites, from wet to dry. The small acorns are eaten by many mammals and birds, and they are an important winter food for migrating waterfowl.
Shumard oak (<i>Quercus shumardii</i>)	✓	✓	✓	✓	✓	✓	✓	80–100	A large, commercially valuable oak found naturally in all but the northern third of Missouri. Frequently grows in association with northern red oak and white oak. Can be planted on a wide variety of sites.
Swamp chestnut oak (<i>Quercus michauxii</i>)			✓		✓	✓	✓	85	Also called cow oak and basket oak. A large well-formed tree, which grows in well-drained soils above the floodplain in southeastern Missouri. Able to withstand flooding for short periods during the dormant season.
Swamp white oak (<i>Quercus bicolor</i>)		✓	✓	✓	✓	✓	✓	70	A fairly fast-growing, medium-sized tree that may reach a diameter of 3 feet. Grows naturally in the northern two-thirds of the state along low hills and stream bottoms, but is adaptable to a wide variety of sites. Despite its name, this species does not naturally grow in swamps. The acorns are one of the favored fall foods for deer, turkey, and many other wildlife species.
White oak (<i>Quercus alba</i>)			✓		✓	✓	✓	85	Found statewide. This important hardwood lumber tree is often an excellent acorn producer. Does best on deep well-drained soils, but does well on dry, poor upland sites. Slow growth rate, but may live for hundreds of years.
Willow oak (<i>Quercus phellos</i>)	✓	✓	✓	✓	✓	✓	✓	70	This tree gets its name from the long, slender, willow-like leaves. Native to southeastern Missouri, but will grow statewide. Does best on poorly drained soils, but can be planted on a variety of sites. Fast-growing oak with small acorns.
Ohio buckeye (<i>Aesculus glabra</i>)				✓			✓	50	Found statewide, it is among the first trees to leaf out and flower in spring and lose its leaves in the fall. Large greenish-yellow flowers are attractive to hummingbirds. The seeds, which are large, shiny, and dark brown, are sometimes carried for good luck and to prevent rheumatism. Tolerates lots of shade.



Pecan



Persimmon



Red mulberry



River birch



Sandbar willow



Silver maple



Sweet gum



Sycamore



Tulip poplar



Arrowwood



American beautyberry



Blackberry



Buttonbush

Price per Seedling			
Species	Available in 10 only	Available in increments of 25	
		25–75	100+
Hardwood trees and shrubs	\$1.00	\$0.60	\$0.50
Orders of multiple species of 10s or 25s cannot be combined for volume discount.			

Species	Common Uses				Wildlife Benefits				Other Important Facts
	Wind Break	Erosion Control	Reforestation	Wetland Restoration	Food	Cover	Pollinator	Mature Height in Feet	
Pecan (<i>Carya illinoensis</i>)			✓	✓	✓			90	Most noted for edible nuts, but also is valued for wood. Does best on moist, well-drained river bottoms. Seedlings are grown from native wild seed.
Persimmon (<i>Diospyros virginiana</i>)	✓	✓	✓	✓	✓			60–70	A small- to medium-sized tree whose fruit is valuable to people and wildlife. Among the hardest of North American woods. Male and female flowers are borne on separate plants, so plant several trees near each other.
Red mulberry (<i>Morus rubra</i>)			✓		✓		✓	50	Medium-sized tree found statewide. Prefers good soil, but can be found on poor sites. Many animals eat the fruit. Seedlings not guaranteed pure red native due to natural cross-pollination with the nonnative white mulberry.
River birch (<i>Betula nigra</i>)	✓	✓		✓		✓		60	A small- to medium-sized streambank tree useful for bank stabilization. Peeling, flaking bark gives the tree an attractive appearance in winter. Grows statewide.
Sandbar willow (cuttings) (<i>Salix interior</i>)		✓		✓		✓		30	Shrub-like, thicket-forming willow found statewide. Occurs on sand bars and muddy stream banks. Good soil binder and bank stabilizer that prevents erosion. Leaves and twigs are browsed by deer. Instructions for planting cuttings are on the back page.
Silver maple (<i>Acer saccharinum</i>)		✓	✓	✓		✓	✓	90	A large bottomland “soft” hardwood. Grown commercially for wood. Perhaps overused as a fast-growing shade tree. Because of the wood’s brittleness, breakage in ice and wind is a problem.
Sweet gum (<i>Liquidambar styraciflua</i>)	✓	✓	✓	✓			✓	80–100	Native to the lowlands and foothills of southern Missouri. Planted extensively statewide. Does best in deep, moist soils. Yellow, orange, and red fall color. Valuable timber tree that can grow 3–4 feet in diameter.
Sycamore (<i>Platanus occidentalis</i>)		✓	✓	✓		✓	✓	80–100	A large bottomland, streambank tree. Can be used as a bank stabilizer along with other bottomland species. Shows a great deal of resistance to beaver damage and wet soil conditions.
Tulip poplar (<i>Liriodendron tulipifera</i>)	✓		✓				✓	90–100	One of the more valuable hardwoods. May reach diameters approaching 2 feet. Found naturally on moist, well-drained soils in southeastern Missouri. Planted widely as an ornamental.
Wildlife Shrubs									
Arrowwood (<i>Viburnum recognitum</i>)					✓		✓	16	This shrub is native to the south-central Ozarks but should do well statewide. It has showy clusters of white flowers in May-June, and the blue-black berries ripen in the fall. Many species of birds and mammals eat the fruit. This shrub attains a spread of 10 to 15 feet. Grows best on well-drained soils and will tolerate partial shade to full sun. Multiple plants are sometimes used for visual screens.
American beautyberry (<i>Callicarpa americana</i>)		✓			✓	✓	✓	10	This rapidly growing, rounded shrub has a 4- to 8-foot spread. Tops will sometimes die back in cold winters, but flowering is on new growth, so dieback or drastic pruning will not affect flowering. Flowers are white to pale pink. The large, palegreen leaves turn yellow in the fall. Showy, purple-blue fruits are attractive to birds and persist on the shrubs into late fall. Grows well in partial shade and on a wide variety of soil types.
Blackberry (<i>Rubus spp.</i>)					✓	✓	✓	5	Found throughout the state in woods, open fields, and glades. Provides habitat for many wildlife species. Edible fruit ripens in July. Stems have thorns.
Buttonbush (<i>Cephalanthus occidentalis</i>)		✓		✓	✓	✓	✓	18	Found throughout the state in low, wet woods, swamps, and along borders of streams and ponds. The flowers are fragrant, white, round clusters about 1 to 1½ inches across and are a favorite nectar source for bees. Many birds eat the outlets and nest in the branches. Does best on moist sites.



Deciduous holly



Flowering dogwood



Gray dogwood



Rough-leaved dogwood



Silky dogwood



Elderberry



False indigo



Hazelnut



Nannyberry



Ninebark



Pawpaw



Redbud



Rose mallow



Serviceberry

Price per Seedling			
Species	Available in 10 only	Available in increments of 25	
		25-75	100+
Hardwood trees and shrubs	\$1.00	\$0.60	\$0.50
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Species	Common Uses				Wildlife Benefits				Mature Height in Feet	Other Important Facts
	Wind Break	Erosion Control	Reforestation	Wetland Restoration	Food	Cover	Pollinator			
Deciduous holly (<i>Ilex decidua</i>)	✓			✓	✓	✓	✓	25	Also called possumhaw, this small- to medium-sized tree produces regular crops of brilliant red fruit on the female plant. The male and female flowers are borne on separate plants, so several trees should be planted near each other. After the leaves fall, the fruit is visible for long distances and helps feed birds in winter and early spring when other foods are depleted.	
Flowering dogwood* (<i>Cornus florida</i>)					✓	✓	✓	40	It's the Missouri State Tree. The seedlings are grown from seed collected from native trees. * <i>The survival of this small-to-medium shade tree is very low. For best results plant in shade, not direct sunlight.</i>	
Gray dogwood (<i>Cornus racemosa</i>)	✓				✓	✓	✓	10	Similar in appearance to rough-leaved dogwood, this tree is smaller and has smooth leaves. Found widely scattered statewide on both moist and rocky sites. Forms thickets by root suckers. Provides excellent wildlife food and cover.	
Rough-leaved dogwood (<i>Cornus drummondii</i>)	✓				✓	✓	✓	20	This thicket-forming shrub found statewide on a wide variety of soils survives poor sites better than other dogwoods. Leaves are rough textured. It does not have large white flowers like flowering dogwoods, but small white flowers appear in May. The shrub has white berries and purple-to-red fall color.	
Silky dogwood (<i>Cornus amomum</i>)	✓			✓	✓	✓	✓	9	This species, also called swamp or pale dogwood, is found statewide except in the lowlands of the Bootheel. Grows in moist ground along streams, rocky banks, spring branches, swamps, wet prairies, and low, wet woods. The flowers are similar to rough-leaved and gray dogwood. The blue fruit is eaten by many wildlife species. Leaves are longer and narrower than other dogwoods.	
Elderberry (<i>Sambucus canadensis</i>)		✓		✓	✓	✓	✓	10	Found throughout the state in open woods, fencerows, roadsides, and along borders of streams and ponds. The flowers are large, showy, flat-topped white clusters that appear in late May to June. The dark-purple berries are edible and make an excellent jelly. Many species of birds and mammals eat the fruit, and deer browse the leaves and branches. Will tolerate both wet and dry sites.	
False indigo (<i>Amorpha fruticosa</i>)		✓		✓	✓	✓	✓	12	Found statewide in moist ground along streams, rocky banks, and low, wet woods. The flowers are 2 to 6 inches long with dense clusters of purple tube-shaped flowers. This shrub is in the legume family, and the seeds are eaten by quail and other wildlife. Bees and butterflies are attracted to the flowers.	
Hazelnut (<i>Corylus americana</i>)	✓	✓			✓	✓	✓	10	Also called American filbert, this thicket-forming shrub is found throughout the state on a wide range of soils and sites. The nut is consumed by people and wildlife.	
Nannyberry (<i>Viburnum lentago</i>)	✓				✓	✓	✓	18	Nannyberry is native to northeast Missouri but will grow statewide. The flowers are rounded white clusters 3 to 5 inches across. Fruit is dark-blue clusters of 3/8- to ½-inch-long berries each containing one large seed. A variety of animals feed on the fruits, leaves and stems. Grows well in both sun and shade.	
Ninebark (<i>Physocarpus opulifolius</i>)	✓	✓		✓		✓	✓	8	A streamside shrub found over much of the state. Forms a massive root system quickly after planting, making it useful to control erosion on streambanks. It is also used as an ornamental. Its name is taken from the way the mature bark curls away from the stem resembling the number 9.	
Pawpaw (<i>Asimina triloba</i>)					✓	✓		20	This small tree has large, drooping, pear-shaped leaves that are slightly aromatic. Inconspicuous flowers are green upon opening but turn maroon as they develop. Edible yellow-green fruits are 3 to 6 inches long and ripen in September. Leaves turn bright yellow in fall.	
Redbud (<i>Cercis canadensis</i>)	✓				✓	✓	✓	30	A small-to-medium understory tree with showy pink flowers in early spring. This legume is an attractive addition to wildlife or windbreak plantings.	
Rose mallow (<i>Hibiscus lasiocarpus</i>)				✓	✓	✓	✓	8	This tall perennial is found in the south half of the state along sloughs, ponds, and streams. Excellent for wetland plantings, pond edges, and other wet sites. Plants die back to the root collar each winter. Large, showy white or sometimes pink flowers bloom from July through September. The seeds are eaten by ducks, quail, and many other birds.	
Serviceberry (<i>Amelanchier arborea</i>)					✓	✓	✓	25	The showy white flowers of this large shrub/small tree are the first to appear in Missouri woodlands each spring. Reddish sweet-tasting fruits are edible but quickly consumed by wildlife. Fall color varies from yellow to orange to red. Found statewide, grows best in partial shade along woodland edges.	



Aromatic sumac



Smooth sumac



Witch-hazel



Wild plum

Price per Seedling			
Species	Available in 10 only	Available in increments of 25	
		25-75	100+
Hardwood trees and shrubs	\$1.00	\$0.60	\$0.50
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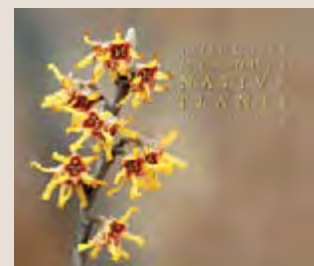
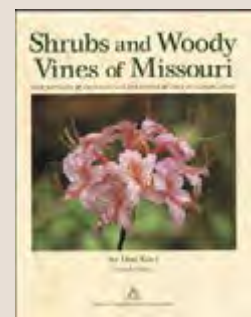
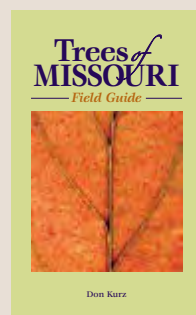
Species	Common Uses				Wildlife Benefits				Other Important Facts
	Wind Break	Erosion Control	Reforestation	Wetland Restoration	Food	Cover	Pollinator	Mature Height in Feet	
Aromatic sumac (<i>Rhus aromatica</i>)	✓	✓			✓	✓	✓	8	A shrub found over much of the state, usually in thickets. Bright-red fruit ripens in late spring or early summer and is eaten by many birds. Also called fragrant sumac.
Smooth sumac (<i>Rhus glabra</i>)					✓	✓	✓	20	Thicket-forming shrub or small tree is found statewide in old fields, prairies, woods borders, and road rights of way. Was widely used by Native Americans and early settlers for medicinal uses. Provides excellent wildlife food and cover. Dark-green summer foliage is followed by scarlet fall color and red berries.
Witch-hazel (<i>Hamamelis vernalis</i>)	✓	✓			✓	✓	✓	10	Large shrub found in and along dry, rocky streambeds. Leaves are collected for medicinal uses. Shrub is valuable for wildlife food and cover, and for controlling erosion along streams.
Wild plum (<i>Prunus spp.</i>)	✓	✓		✓	✓	✓	✓	25	A small thicket-forming tree. One of the first trees to bloom in the spring. Produces a bright-red edible fruit. Provides excellent food and cover for wildlife.

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FOLD
HERE

Before undertaking any extensive planting project, consult the MDC regional office in your area. The following books can be purchased at most nature centers or, call toll-free 1-877-521-8632. Prices do not include shipping, handling, and tax.

- ≈ *Trees of Missouri Field Guide* (soft cover \$8.00)
- ≈ *Shrubs and Woody Vines of Missouri* (soft cover \$16.50)
- ≈ *Shrubs and Woody Vines of Missouri Field Guide* (soft cover \$8)
- ≈ *Tried & True Missouri Native Plants For Your Yard* (soft cover \$7)



TREES WORK TRIVIA QUESTIONS

True or False: Surgery patients with a view of trees out their hospital window heal faster and use less painkillers.

When you spread mulch around the base of a tree, it should be spread in the shape of:

- A. A volcano
- B. A donut
- C. A turtle

What is the difference between deciduous and coniferous (Not evergreen) trees?

- A. Deciduous trees lose their leaves in the fall, while evergreens do not.
- B. Only deciduous trees produce fruit and seeds.
- C. Evergreen trees have smoother bark.

True or False: The presence of street trees in a neighborhood increases property values by over \$8,000.

True or False: Shade from two trees near your house can reduce air conditioning costs up to 30 percent.

When is Arbor Day in Missouri?

- A. First Friday of April
- B. Last Friday of April
- C. First Monday of May

Missouri leads the nation in the production of this wood product:

- A. Toilet paper
- B. Railroad ties
- C. White oak barrels

(True, B, A, True, True, A, C)



Flowering dogwood

Seedling Shortages: Why Does This Happen?

We are often asked why we run out of some seedling species so soon.

The nursery plants more seed of most species each year. The nursery advertises what we have to offer, and more people order seedlings each year. Through the years, we monitor which species sell out and try to buy more seed of those species. Unfortunately, not as many people are collecting and selling seed to us, so seed is harder to get.

To help combat this, all MDC regional offices statewide are now buying seed from collectors. If you want to help in this effort, you can contact your local regional office to get this year's seed buying list or the nursery at 573-674-3229. Seed collecting can be a good source of additional income, but before you start, be sure you call your local MDC office to make sure we are still buying the species you are interested in collecting. Once the nursery reaches our allotted quota by species, we stop buying it.

Various factors, including frost during the flowering stage and drought during the summer growing season, affect seed production. Many times, a poor year or two of

seed crop yields follow great yield years, so we try to maintain a five-year supply of many of the species we grow. If we increase the amount of any popular species we plant each year, we further cut into our reserve, leaving us susceptible to running low or running out during years of poor seed yields. That's why we don't just double the seed we plant each year of flowering dogwood, paw paw, serviceberry, and other popular species.

Most of our seed typically gets planted in the fall, but this past fall was too wet to plant. Most seeds must go through a cold, moist stratification process of 30 to 120 days before it is triggered to germinate in the spring. Since we couldn't plant 40 of the 44 species of fall seed, most had to be stored and stratified in the coolers. This had never been tried before, but we had great success in all but four species: flowering dogwood, wild plum, blackgum, and black cherry. The black cherry didn't germinate at all, and we will have limited supplies of the other three species.

We took some great notes and learned quite a bit, should we ever have to do this again.



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How to Plant Cottonwood and Willow Cuttings

Cottonwood and willow have the ability to sprout roots and leaves from a stick-like cutting. The cottonwood cutting is typically 18 inches long, and the willow 12 inches. Most of the cutting needs to be in the soil, so only leave 2 to 4 inches (about 2 buds) out of the ground.

Also, the cutting must be planted with the buds pointed upward. All of the cuttings in a bundle point the same way, so you will only have to look carefully at one cutting per bundle.

