Home Turf Management





Soil Preparation Before Planting

- · Test soil 6 to 8 weeks before planting date.
- · Follow recommendations from soil test.
- A starter fertilizer can be worked into the seed bed prior to planting (example: 18 -24 -6).
- Control troublesome weeds before planting.

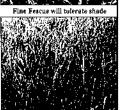
Turfgrass Establishment

- Bluegrass, fescue and ryegrass grow best from 60 to 75° F.
- <u>Late August to mid-October</u> is an ideal time to plant seed of these cool-season grasses.
- Bermudagrass and zoysia grass grow best from 80 to 95° F.
- Seed, plugs or sprigs of these warm-season grasses should be planted between May 1 and June 30.
- Sod of cool-or warm-season grasses can be installed any time of the year, as long as the soil is not frozen.

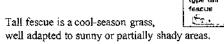
Selecting a Fescue

- Fescue is the most popular lawngrass in middle Tennessee.
- Fescue grows best in deep, well-drained soils with air temperatures from 60 to 75 °F.
- High temperatures and drought slow their rate of growth during late spring and summer,





Tall Fescues



i. Coaise

a. Turf-

- When densely sown, a pure stand forms a moderate to coarse-textured lawn that is uniform in appearance with good weed and disease resistance.
- New varieties that are finer in texture and shorter in stature are known as <u>turf-type tall fescues</u> and <u>dwarf turf-type tall fescues</u>.

Fescue Seed Mixtures for Shade

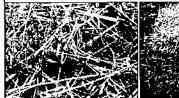
- Mixing seeds of several species may improve the insect, disease and wear resistance, recuperative capacity and shade tolerance of a turf.
- Creeping red fescue is a shade-tolerant, sod-forming species that grows well in humid areas.
- Chewings fescue has a bunch-type growth habit, excellent shade and cold tolerance, and is less tolerant of drought than strong creeping fescue.
- Hard fescue is more tolerant of high temperatures than chewings or strong creeping fescues.

Starting Fescue From Seed

- Sow 5 to 8 lbs. of fescue seed for every 1,000 sq. ft.
- · The best time to seed is late August to mid-October
- · Seeds should germinate from 6 to 12 days.
- Cool temperatures and moist soils during late summer, fall, and early spring promote plant growth.
- Fescues may be seeded in early spring, but spring plantings often result in greater susceptibility to heat and drought stresses.
- Young fescue plants with limited root systems often do not survive the summer heat and dry conditions.

Straw after Seeding

- Straw or hay should be broadcast uniformly over the seedbed to cover 50 to 75 percent of the soil surface.
- · A one 50-pound-bale will cover about 1,000 square feet.
- · Straw often contains some weed seeds.





Watering the Lawn

- New grass seedlings may require light daily irrigation for several weeks after seeding.
- 1/8 to 1/4 inch or from about 75 to 150 gallons per 1,000 square feet.
- As plants increase in size, more water can be applied less often (1/2 inch or about 300 gallons per 1,000 square feet every two to three days).
- After new grass is 2 inches in height, apply
 1 inch of water weekly to encourage deep rooting.

Fertilization & Liming

- The application of 1/2 pound of Nitrogen every 1,000 square feet, applied three to five weeks after seedlings emerge from the soil, will support continued plant growth.
- Fescue should be fertilized during its season of rapid growth, from fall to early spring.
 (September, October, November - March, April)
- Only a soil test can tell you if your soil needs fertilization or liming.

Fertilizers (N, P & K)

- · 20-10-5 (What do these numbers mean?)
- A 50 pound bag of 20-10-5 fertilizer contains:
 20% nitrogen (.20 x 50 lbs = 10 lbs)
 10% phosphorus (.10 x 50 lbs = 5 lbs)
 5% potassium (.05 x 50 lbs = 2.5 lbs)
- · Nitrogen promotes green stems and grass blades
- Phosphorus encourages blooming and root growth
- · Potassium promotes strong plants and disease resistance

Mowing the Lawn



- Mow when the grass reaches a height about 1 1/3 times the proper cutting height.
- Tall fescue looks best when mowed 3" high.
- In dry summers and when growing in heavy shade, mowing to 3" high helps the grass tolerate its environment.
- Keep the mower blade sharp and mow when the lawn is dry.
- Fescue seedlings may be easily torn or lifted from the soil by a dull mower blade.

Lawn Mower Safety





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Lawn Mower Accidents



- Four types of power lawn mower accidents cause the majority of injuries.
 - 1) Contact with rotating blade
 - 2) Propelled objects
 - 3) Overturning
 - 4) Riding mowers running over the victim

Before Starting the Mower



- Put on close fitting clothes and sturdy, non-slip shoes.
- If the lawn is wet wait!
- Go over the lawn carefully to pick up stones, wire, toys, dog bones – anything the mower blade might pick up and throw.
- Adjust cutting height before starting mower.
- Never point discharge chute at others.
- Turn off the mower before you leave it.

While You are Mowing



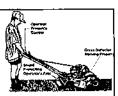
- Never run mower over gravel, stones or hard, immovable objects like pipes, rocks or sidewalk edges.
- Mow advancing forward whenever possible so you can see where you're going.
- Stay clear of the blade housing and the discharge chute.
- Never point discharge chute at others.
- Before refueling, turn of mower to cool down motor.

Mowing the Lawn

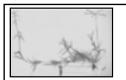


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Lawn Mower Safety



- Read the operator's manual
- Train operator
- Check your lawn before mowing
- Check guards and shields
- Dress properly to do the job safely
- · Handle gasoline with care

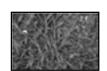






Weed Identification & Controls







Weed Types

- Broadleaf Weeds: Leaves are broad, detached from main stem by sub-stem or petiole, have a netted appearance, may be simple or compound.
- Grass Weeds: Leaves are narrow, not detached from main stem, veins run parallel.
- Sedges: Are not grasses, but similar in appearance, leaves have a triangular stem.





Life Cycles

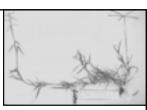


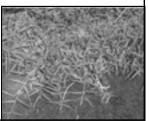
- Summer Annuals: Generally germinate in spring, grow in summer, produce seed and die in late fall or after first hard frost. 12 month life cycle.
- Winter Annuals: Germinate in late summer to early fall and begin to grow, are dormant or semi-dormant in winter, flower the following spring and die in late spring or early summer. 12 month life cycle.
- Perennials: Live for more than 2 years, may regenerate indefinitely; spread by seeds, stolons, rhizomes or nutlets.

Crabgrass A warm season, annual grassy weed that spreads by seed. Germinates in the spring when air temperature is 65°F for 4 or

Bermudagrass

- A warm season, perennial grass that spreads by seed and roots.
- · A warm-season grass.
- Will not grow in the shade.
- Grows well in hot weather

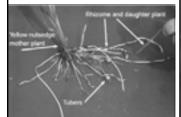




Nutsedge

(This is not a grass.)

- A perennial that spreads by seeds, rhizomes and tubers.
- Stems are solid, three-sided and triangular.





more days.

Wild Garlic

(cool-season perennial)

- Spreads by underground bulbs and aboveground bulblets.
- You can identify this weed by its strong garlic odor and its long, hollow cylindrical leaves.

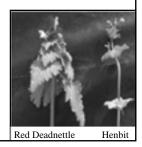




Red Deadnettle

- · A cool season, annual, that spreads by seed.
- Closely resembles henbit, except that all of its leaves have petioles; the leaves of henbit do not have petioles.





Henbit

- A cool season, annual weed that spreads by seed.
- Leaves are opposite, almost circular with rounded teeth.
- Flowers are pink to purple arranged at the base of the leaves.

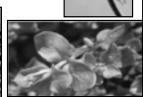




Common Chickweed

- A cool season, annual weed that spreads by seed.
- The small flowers have five white, deeply notched petals.





Mousear Chickweed

- A cool season perennial that spreads by seed.
- Has hairy leaves and tiny, white flowers..







Oxalis

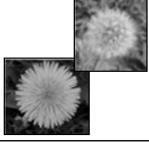
- A perennial that spreads by seed.
- Flowers have 5 bright yellow petals.
- Leaves are divided into three heart-shaped parts.



Dandelion

- A perennial that spreads by seed.
- · The seeds are carried by the wind.





Indian Strawberry

- · A warm season perennial weed.
- Reproduces by seed and spreading stolons that root at the nodes.
- Each leaf is composed of three parts.
- Yellow flowers and a red berry.





White Clover

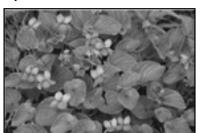
- A warm season perennial that spreads by seed and roots.
- Each leaf has three parts.
- The flower heads contain 20 to 40 small, white flowers.
- Leaflets usually have a green or white marking.





Wild Violet

- A perennial plant with heart-shaped leaves and purple flowers.
- · Spreads by bulbs.



Herbicides to Prevent Weeds

- Apply to the soil to kill weed seeds as they germinate.
- It does not control established weeds.
- Used for pre-emergence control of annual grasses and certain broadleaf weeds in turfgrass.



Herbicides to Kill Established Weeds







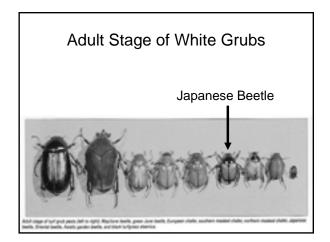
- · Kills only broadleaf weeds.
- Will not hurt the lawn grass

Herbicides that kill Weeds and Grass

- Will kill weeds and grass.
- · Will kill flowers.
- · Will kill vegetables.
- Will injure trees and shrubs.



White Grub Pests of Lawns White grubs are the most common turf pests in Tennessee



White Grub Control

- Apply during <u>Mid-June</u> <u>through Mid-July.</u>
- Will control white grubs for three months.



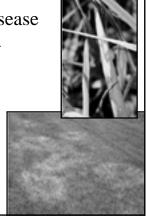
White Grub Control

- Apply in March to May or Mid-July to Mid-August.
- Will kill the white grubs when they feed on grass roots.



Brown Patch Disease

- The most serious disease of tall fescue during summer.
- May to July is prime brown patch season in Middle Tennessee.
- Brow patch often develops when temperature reach 90°F during the day and 70°F at night.



Brown Patch DiseaseControl

- Chlorothalonil or myclobutanil applied as a foliar spray prior to hot, humid weather prevents brown patch development.
- Most fungicides have to be applied at 14 day intervals when conditions favor disease development.

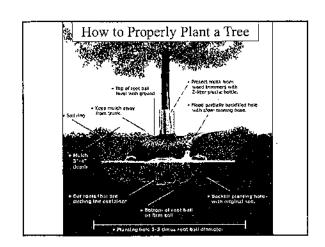


Keeping a Healthy, Green Lawn

- Plant Grass in the Right Place: Full sun (8 hours or more)
- Control Weeds: Broadleaf and Grassy Weeds
 Preemergence (Sept. 1 to Oct. 15) (Feb. 1 to March 15)
- Fertilize: March 15, April 15 (½ lb per 1,000 sq. ft.) Sept.1, Oct.15, Nov.15 – (1 lb per 1,000 sq. ft.)
- Mowing: 2" tall in Spring & Fall 3" tall in Summer
- Water When Needed: From 5 am to 11 am to allow the grass blades to dry 1 to 11/2" of water per week
- Control Insects and Diseases: White Grubs & Brown Patch Disease

Planting and Pruning Trees



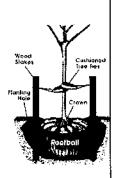


Backfill

- It is best to use the same soil that was taken out of the hole.
- Fill the hole up halfway with soil and water slowly.
- Finish filling the hole with the backfill and water.
- Make sure to work the soil around the ball firmly to eliminate any air pockets.

Staking

- Staking is not always needed.
- Staking can be used to stabilize the root ball, keep mowers away from the tree, or help keep the tree upright.
- Keep guy wires on for only one growing season.



Remove Tags, Labels, & Rope

- Remove all tags, labels, and ropes.
- This will prevent the trunk of the tree or a branch from being girdled as it grows.

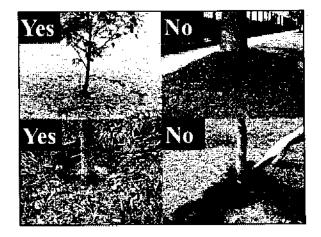


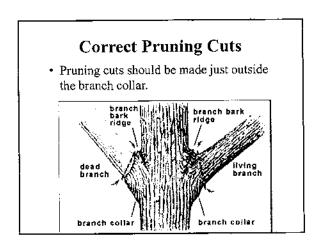
Damage caused by wire-in-hose left on 2 years

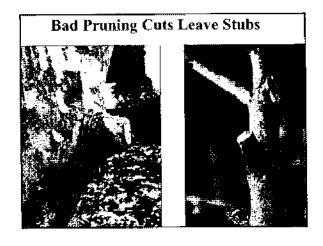
Watering

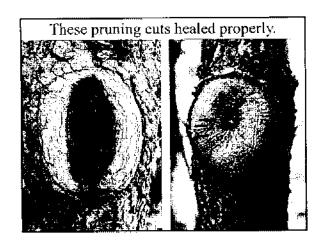
- · Water slowly to prevent runoff.
- · Keep the soil moist, but not soaked.
- · Over-watering causes leaves to turn yellow and fall off.
- Water trees at least once a week and more frequently during hot weather.
- When the soil is dry below the mulch, it is time to water again.

Mulching Mulch should be 3 to 4 inches thick. The mulch needs to be placed in a donut or tire shape around the trunk of the tree. The mulch must be kept away from the trunk to keep insects away and to prevent suffocation of the tree. To Not Cover Tree frunk with Mulch Hurts the Tree

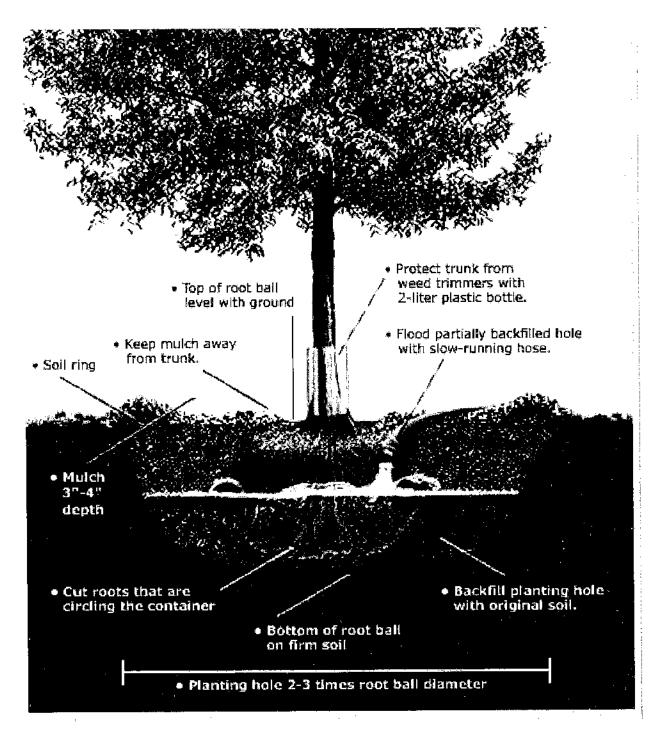








Plant Your Tree Properly



Celebrate our natural heritage and protect native plant communities

- 1. Learn more about native plants.
- 2. Buy nursery propagated plant material.
- **3.** Don't dig plants from the wild.
- 4. Protect native plant and natural area habitat.
- 5. Promote responsible landscaping practices.
- **6.** Plant native and not exotic plant species.

For more information

Warner Park Nature Center

7311 Highway 100 Nashville TN 37221 615/352-6299

Tennessee Dept. of Environment and Conservation (TDEC)

Division of Natural Heritage 401 Church Street, 8th Floor Nashville TN 37243-0447 615/532-0436

Tennessee Exotic Pest Plant Council (TN EPPC)

P.O. Box 40692 Nashville TN 37204 615/532-0436

Tennessee Native Plant Society

Department of Botany University of Tennessee Knoxville TN 37996-100 615/532-0439

Text by
Warner Park Nature Center
Tennessee Natural Areas Program
in the Division of Natural Heritage/TDEC

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Co-sponsored by

Through The Green Golf and Learning Center Moore and Moore Garden Center

Friends of Warner Parks

Growild, Inc.

Tennessee Native Plant Society

Tennessee Field Office of The Nature Conservancy TDEC Division of Natural Heritage

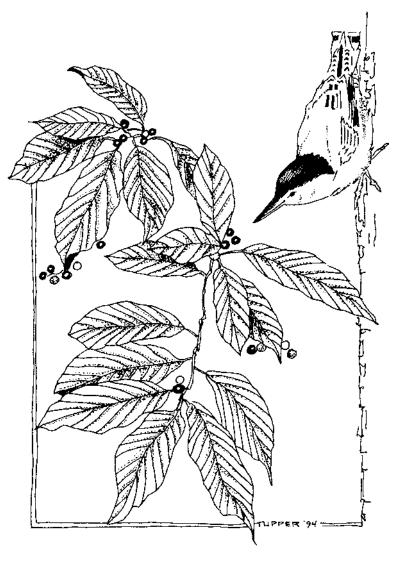
TDEC Bureau of State Parks

Tennessee Wildlife Resource Agency

Tennessee Valley Authority

MIDDLE TENNESSEE

Central Basin and Highland Rim



LANDSCAPING WITH NATIVE PLANTS

PROMOTES BIODIVERSITY

and endorses a land ethic that celebrates our natural heritage

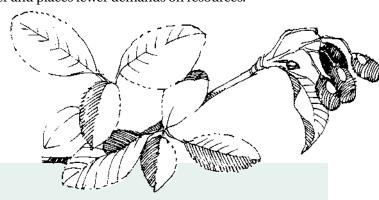
Our natural heritage

The use of native plants in landscaping is a celebration of our natural heritage and an awakening of a land ethic first expressed by Aldo Leopold more than 50 years ago.

The natural processes from which natives evolve represent the cog and wheel of a healthy ecosystem sustained by a complex web of biological diversity.

Native plants have many inherent qualities and adaptive traits that make them aesthetically pleasing, practical, and ecologically valuable for landscaping.

Using native plants contributes to the health and often the restoration of an ecosystem. Landscaping with natives in an urban setting helps restore regional character and places fewer demands on resources.



Native

species naturally occurring in a region (indigenous)

Exotic

species introduced by humans, either deliberately or accidentally (alien, non-native)

What are natives?

Natives are plants that evolved over geologic time and are distributed across the landscape largely in response to climatic episodes and adaptation to site conditions related to land formation.

Natives are generally defined as plants that occurred in North America before European settlement. This distinction is made because of the large-scale changes in the flora that have resulted since European settlement and the introduction of "exotic" plants.

Exotics are plants that are directly or indirectly, deliberately or accidentally introduced by human action. To be more precise, natives are natural elements of a regional landscape. While some species are native to North America, they may be exotic to Middle Tennessee.

Natives vs. exotics

While many exotics are harmless, others pose serious threats to biodiversity. Exotics that escape and naturalize change the floral composition of native plant communities. Exotics that invade native plant communities spread, out-compete, and displace natives. Other exotics are vectors for disease and exotic insects. Future introductions can be prevented by using native species.

Using natives also exhibits regional flora and promotes our natural heritage. Natives have often been overlooked and their aesthetic value ignored. Instead, many regions look the same because overuse of the same exotics has created a monotonous, predictable landscape.

Basics about using natives

When landscaping with natives match the right plants with the right site conditions. Consider using plants that occur together in their natural habitats. Do your homework before planting; study the plants and the site condition information in this brochure. Visit a natural area and observe how plants occur and design your landscape accordingly. Buy nursery propagated plants. Remember, landscaping with natives is art imitating nature.

Benefits of natives

- ➤ Adapted to regional conditions and may require less maintenance and are cost-effective.
- ➤ Hardy, withstand extreme winter cold, do not suffer from die back.
- ➤ Environmentally friendly, require fewer pesticides and fertilizers because of natural adaptations.
- ➤ Promote biodiversity and stewardship.
- ➤ Provide food and shelter for native wildlife.
- ➤ Restore regional landscapes.
- ➤ Prevent future exotic introductions.

Natives for wildlife

provide winter cover and food.

Using natives in landscaping helps sustain native butterflies, moths and other beneficial insects; native birds, reptiles, mammals, and other fauna. Fall migrating birds depend on high-energy fruits from flowering dogwood and spicebush. Spring migrants feed on insects that occur on oak trees. Beech and other native trees provide nesting habitat, while Eastern red cedar, Virginia pine, and American holly

- ➤ Don't dig plants from the wild.
- ➤ Buy nursery-propagated plant material.



MIDDLE TENNESSEE

Central Basin and Highland Rim

The Central Basin and the Highland Rim are uniquely different physiographic provinces that make up Middle Tennessee. Site conditions for each respective province are determined by topography, soil pH, soil depth, aspect, availability of light, and hydrology. These site conditions support a mosaic of native plant communities.

- ➤ Dry upland sites support xeric oak-hickory forests.
- ➤ Beech, tulip poplar, basswood, and sugar maple (mixed mesophytic) forest communities occur on north-facing slopes.
- ➤ Floodplains and upland swamps support "wet feet" or hydric plants.
- ➤ Unique barrens occur in open grassy areas on the Highland Rim.
- ➤ Rare cedar glades occupy thin soil, poorly drained limestone outcrops (winter wet, summer dry habitat) in the Central Basin.



Soil pH is a distinguishing feature between the Basin and the Rim. The elliptically shaped Central Basin is underlain by Ordovician limestone and has alkaline soils, whereas much of the surrounding Highland Rim has acidic soils that are heavily leached and often occur in the resistant siliceous Fort Payne formation.

For landscaping purposes it is important to remember that plants growing in our region are specifically adapted to hydrology (moisture and dryness) and soil pH (acidity and alkalinity). Soil moisture, soil pH and light availability are important limiting factors. Matching plants to site conditions will yield the maximum benefits that natives provide.

Native plant recommendations



COMMON NAME

indiaobush

sweetshrub

black chokeberry

New Jersey tea

silky dogwood

buttonbush

leatherwood

hearts-a-bustin

swamp mallow

wild hydrangea

Virginia-willow

mountain laurel

spicebush

ninehark

wild azalea

fragrant sumag

winged sumac

carolina rose

swamp rose

prairie rose

bladdernut

farkleberry

deerberry

bigleaf snowbell

lowbush blueberry

SMALL TREES

serviceberry

naw naw

ironwood

fringe tree

hawthorn

witch-hazel

American holly

cucumbertree

hop-hornbeam

American plum

Chicasaw plum

Carolina buckthorn

wahoo

redbud

hercules club

buckthorn bumelia

flowering dogwood

roughleaf dogwood

manleleaf vihurnum

coralberry, buckbrush

oakleaf hydrangea

common winterberry

hazelnut

American beautyberry

LIGHT

F = full sunlight P = partial shade S = shade

SCIENTIFIC NAME

Alnus serrulata

Amornha fruticosa

Aronia melanocarna

Calvcanthus floridus

Callicarpa americana

Cornus amomum

Dirca palustris

llex verticillata

Itea virginica

Kalmia latifolia

Lindera benzoin

Rhus aromatica

Rhus copallina

Rosa carolina

Rosa palustris

Rosa setigera

Staphlea trifolia

Styrax grandifolia

Sambucus canadensis

Vaccinium arboreum

Vaccinium vacillans

Vihurnum acerifolium

Amelanchier arborea

Aralia sninosa

Asimina triloba

Cornus florida

Crataegus mollis

llex onaca

Washington hawthorn Crataegus phaenopyrum

Bumelia lycioides

Carpinus caroliniana

Chionanthus virginicus

Euonymous atropurpureus

Cornus drummondi

Hamamelis virginiana

Magnolia acuminata

Oxydendrum arboreum

Ostrya virginiana

Prunus americana

Ptelea trifoliata

Prunus angustifolia

Rhamnus caroliniana

Symphoricarpus orbiculatus | • | • |

Physocarpus opulifolius

Rhododendron canescens

golden St. John's Wort Hypericum frondosum

shrubby St. John's Wort Hypericum prolificum

Corylus americana

Euonymus americanus

Hibiscus moscheutos

Hydrangea quercifolia

Ceanothus americanus

Cenhalanthus occidentalis

SOIL MOISTURE

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H = hydric; wet, plants periodically or often inundated by water M = mesic; moist, adequate soil moisture retention year-round

S = sub-xeric; moist to dry, seasonally moist, periodically dry

MOISTURE

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X = xeric; dry & drought resistant, little moisture retention, excessively drained

SOIL pH

B = basic; prefers limestone A = acidic; prefers acidic soils

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R = restricted to either B or A

COMMON NAME	SCIENTIFIC NAME	L	LIGHT		MOISTURE			SOIL pH			
		F	Р	S	Н	M	S	Χ	В	Α	R
SMALL TREES (conti	nued)										
staghorn sumac	Rhus typhina	•	•				•	•			
southern rusty blackhaw Viburnum rufidulum		•	•	•		•	•	•	•		
northern blackhaw	Viburnum prunifolium	•	•	•		•	•	•			

northern blackhaw	Viburnum prunifolium	•	•	•
TREES				
red maple	Acer rubrum	•	•	
silver maple	Acer saccharinum	•	•	Ť
sugar maple	Acer saccharum	•	•	•
buckeye	Aesculus glabra	+	•	•
yellow buckeye	Aesculus octandra		•	•
river birch	Betula nigra	•	•	•
bitternut hickory	Carya cordiformis	•	•	•
pignut hickory	Carya glabra	•	•	•
shagbark	Carya ovata	•	•	•
mockernut	Carya tomentosa	•	•	•
yellow-wood	Cladrastis lutea	•	•	•
persimmon	Diospyros virginiana	•	•	
American beech	Fagus grandifolia	•	•	•
white ash	Fraxinus americana	-	•	•
green ash	Fraxinus pennsylvanica	•	•	•
blue ash	Fraxinus quadrangulata	-	•	•
Kentucky coffeetree	Gymnocladus dioicus	-	•	•
			-	-
black walnut red cedar	Juglans nigra	•	•	•
	Juniperus virginiana Liquidambar styraciflua	•	•	
sweetgum		•	•	•
tulip poplar	Liriodendron tulipifera	•	•	
blackgum	Nyssa sylvatica	•	•	•
red mulberrry	Morus rubra	•	•	•
Virginia pine	Pinus virginiana	•		
shortleaf pine	Pinus echinata	•		
sycamore	Platanus occidentalis	•	•	
black cherry	Prunus serotina	•	•	
white oak	Quercus alba	•	•	
chinkapin oak	Quercus muhlenbergii	•	•	
chestnut oak	Quercus prinus	•	•	
bur oak	Quercus macrocarpa	•	•	
northern red oak	Quercus rubra	•	•	
black oak	Quercus velutina	•	•	
pin oak	Quercus palustris	•	•	
post oak	Quercus stellata	•	•	
shumard oak	Quercus shumardii	•	•	
scarlet oak	Quercus coccinia	•	•	
swamp white oak	Quercus michauxii	•	•	
water oak	Quercus nigra	•	•	
willow oak	Quercus phellos	•	•	
southern red oak	Quercus falcata	•	•	
black willow	Salix nigra	•	•	
sassafras	Sassafras albidum	•	•	
			-	-

Tilia americana

crossvine	Bignonia capreolata	•	•		•	•		l	
trumpet creeper	Campsis radicans	•	•			•	•		
leatherflower	Clematis versicolor	•	•	•	•	•	•		
virgin's bower	Clematis virginiana	•	•	•	•	•	•		
coral honeysuckle	Lonicera sempervirens	•	•	•	•	•	•		
Virginia creeper	Parthenocissus quinquefolia	•	•	•	•	•	•		
passion flower	Passiflora incarnata	•	•			•	•		

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GRASSES

Big bluestem
Little bluestem
Broomsedge
River cane
River oats, Spangle grass
Canada wild rye
Bottle brush
Switch-grass
Ladian grass

Actaea alba

Andropogon gerardii Andropogon scoparius Andropogon virginicus Arundinaria gigantea Chasmanthium latifoliu Elymus canadensis Hystrix patula Panicum virgatum Sorghastrum nutans

FLOWERS

Doll's-eye baneberry Wild columbine Wild ginger Butterfly weed New England aste Bushy aster Fall blue aster Blue false indigo Tall bellflower Shooting star Mist flower Wild geranium Woods sunflower Small headed sunflower Liverleaf Alumroot Jewelweed Spotted iewelwee Dwarf crested iris Cardinal flower Great blue lobelia Virginia bluebells Partridge-berry Bergamot Prickly pear Appalachian pachysandra Wild blue phlox Beard-tonque Jacob's ladder Poke weed Solomon's sea Wild Petunia Fire Pink Indian Pink

Anemone virginiana Aquilegia canadensis Asarum canadense Asclepias tuberosa Asclepias incarnata Aster novae-angliae Aster dumosus Aster patens Bantisia australis Campanula americana Coreopsis major Dodecatheon meadia Funatorium fistulosum Euportium coelestinum Geranium maculatum Helianthus divaricatus Hepatica acutiloba Heuchera americana Impatiens pallida Impatiens capensis Iris cristata Lobelia cardinalis Lobelia syphilitica Mertensia virginica Mitchella repens Monarda fistulosa Opuntia humifusa Pachysandra procumbens Phlox divaricata Pentstemon calvcosus Polemonium rentans Phytolacca americana Polygonatum biflorun Ruellia humilis Silene virginica

an Pink

FERNS

Lady-fern
Sensitive fern
Cinnamon fern
Chain fern
Maidenhair fern
Ebony spleenwort
Christmas fern
Common grape fern
Broad beech fern

Spigelia marilandica

Athyrium felix-femina Onoclea sensibilis Osmunda cinnamomea Woodwardia areolata Adiantum pedatum Asplenium platyneuron Polystichum acrostichoides Botrychium dissectum Phegopteris hexagonaptera Woodsia obtusa

MOSAIC FOR FULL SUN

Little blue stem
Big blue stem
Indian grass
Canada rye grass
Grey headed coneflowe
Blackeyed susan
New England aster
Bushy aster
Butterfly weed
Blue false indigo
Rose vervain
Joe Pye weed
Wild bergamot
Ironweed
Shooting star

Andropogon scoparius Andropogon gerardii Sorghastum nutans Elymus canadensis Ratibida pinnata Rudbeckia hirta & triloba Aster novae-anglie Aster dumosus Asclepias tuberosa Baptisia australis Verbena canadensis Eupatorium fistulosum Monarda fistulosa Vernonia altissima Dodecatheon meadia



MOSAIC FOR SHADE

Thimbleweed
Wild Ginger
Ebony Spleenwort
Shooting Star
Alumroot
Pachysandra
Christmas Fern
Broad Beech Fern
Golden Ragwort
Foam-flower
Spiderwort
Violets
Woodsia

Anemone virginiana
Asarum canadense
Asplenium platyneuron
Dodecatheon meadia
Heuchera americana
Pachysandra procumbens
Polystichum acrostichoides
Phegopteris hexagonaptera
Senecio glabellus
Tiarella cordifolia
Tradescantia virginiana
Violet spp.
Woodisa obtusa

