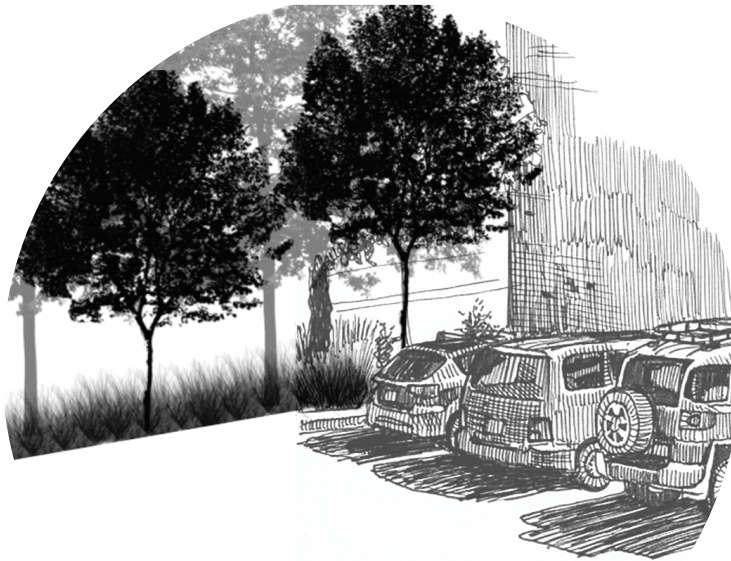




GREEN MACOMB URBAN FOREST PARTNERSHIP: PARKING LOT PLANTING GUIDANCE





I. INTRODUCTION

IMPLEMENTING MACOMB COUNTY'S URBAN FOREST VISION



To create a coordinated green infrastructure strategy to systematically implement and leverage environmental best practices in Macomb County, strengthening the economic vitality, quality of life, and environmental well-being of the region.

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GREEN MACOMB PARTNERSHIP PURPOSE

The Green Macomb Urban Forest Partnership, funded by an urban forestry grant issued by the U.S. Department of Agriculture - Forest Service and distributed through the Michigan Department of Natural Resources' Urban & Community Forestry Program, is implementing regional policy to target tree canopy increases in urban areas in Macomb County with less than 20% coverage, with the aim of achieving 40% tree canopy for Southeast Michigan. As a Core Partner, ITC Holdings Corp. (ITC) has provided significant financial support and the consulting services support of Environmental Consulting & Technology, Inc. (ECT) as grant match for the Partnership. The following guidance was developed by ITC and ECT with the Core Partners to encourage appropriate tree canopy and green infrastructure expansion in the communities of Macomb County.

The Partnership promotes planting the **Right Tree in the Right Place for the Right Purpose!** Not all tree species are tolerant of urban settings and may not be appropriate in scale for tight (less than four feet wide) planting beds, under electrical lines, or over underground utilities. Some species are better than others for mitigating stormwater runoff or providing fall color, shade, or wildlife habitat. This Parking Lot Planting Guidance is intended to provide best planting practices and recommended species for various planting scenarios and site conditions to encourage sustainable tree and other plant establishment in urban settings. This guidance includes important factors to consider when designing an urban planting, a table of recommended plant species and their key characteristics critical to selecting appropriate material, and an example plan and section illustrating best planting practices. Also included is a list of invasive ornamental species not recommended for use given their tendency to spread from urban plantings into natural areas. When feasible and appropriate, diverse plantings with canopy and understory trees, shrubs, and/or groundcover vegetation provide myriad ecological, aesthetic, health, and socioeconomic benefits to urban communities. Please refer to green.macombgov.org to find additional guidance, access to mapping, and reference materials that support the Green Macomb Urban Forest Partnership.



II. ENVIRONMENTAL CONDITIONS

MICROCLIMATE & SOILS:



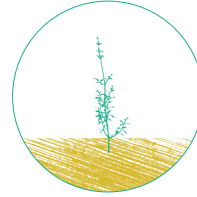
SUN / SHADE

The amount of sunlight or shade needed for a plant or tree to grow to maturity.



SOIL

The amount of moisture and nutrients needed for a plant or tree to grow to maturity.



SALT

Some plants can tolerate salt and others will not survive or are highly sensitive to the presence of salt.

LAND USE & VEGETATION: RESIDENTIAL, COMMERCIAL, & EASEMENT LANDSCAPES



RESIDENTIAL

Vegetation best suited for residential landscapes.



COMMERCIAL

Vegetation best suited for areas with vehicular and/or pedestrian traffic.



EASEMENTS

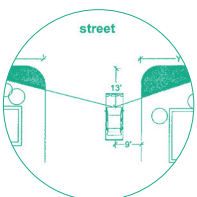
Vegetation best suited for utility rights-of-way.



EXISTING VEGETATION

Onsite plants that will remain.

HUMAN NEEDS: SAFETY & AESTHETICS



SAFETY

Plantings that provide residents, businesses, and utility companies with clear visual and physical access.



CLEARANCE

Appropriate distances between vegetation and utility lines.



AESTHETICS

Beautiful plant combinations that bring additional value to the site throughout the year.



III. TYPES OF PLANTINGS

Canopy Tree

Understory Tree

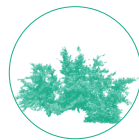
Shrub

Perennial Groundcover



CANOPY

The upper layer formed by mature tree crowns. It provides protection from strong winds and storms, while also intercepting sunlight and precipitation.



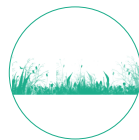
SHRUB

A woody plant that is smaller than a tree and has several main stems arising at or near the ground. Typically part of the understory and groundcover.



UNDERSTORY

The underlying layer of vegetation; specifically the vegetative layer of trees and shrubs between the forest canopy and the groundcover.



PERENNIAL GROUNDCOVER

A low-growing dense growth of woody or herbaceous plants under 2 - 5ft. tall. They prevent soil erosion and are found beneath the understory and shrub layer.



IV. DESIGN CONSIDERATIONS | BEST PLANTING PRACTICES

RIGHT TREE, RIGHT PLACE, RIGHT PURPOSE

Trees provide many benefits to our communities throughout the year. Their many roles and functions contribute to the health and beauty of our surrounding environment. They have the ability to cool your parking lot in the summer and buffer cold winds. When planting a tree, it's important to consider these questions:

1. **HEIGHT, CANOPY SPREAD, AND DISTANCE TO STRUCTURES:** How tall will the tree grow and will it interfere with utility lines, walls, or roofs when it's fully grown? How wide will the tree grow? Will it hang over a street, sidewalk, or bike lane? If it's low growing, can I easily see around the tree or are there issues of visibility and safety?
2. **SUN, SOIL, AND MOISTURE REQUIREMENTS:** How much sun does the tree need? What type of soil does it need? How much water does it need? Is there a lot of concrete surrounding the tree which could increase ambient temperatures or pH around the tree?
3. **IS IT DECIDUOUS?** Will it lose its leaves in the winter? Is it evergreen? (Will it provide winter visual screening and wind attenuation?)
4. **FORM:** What will the shape of the tree be as it matures? Will it interfere with nearby structures? Will it complement structures and existing vegetation in the landscape?
5. **GROWTH RATE:** How long will it take for your tree to reach its full height?
6. **FRUIT:** Does it drop any fruit or seeds? Most plants do! What will the fruit or seeds fall on?
7. **PLANTING SPACE:** How much space is available for tree roots? Minimums of 4ft width and 1,000 cubic ft volume of soil are recommended per tree.
8. **SALT AND POLLUTION:** Will the area be salted frequently during colder months? Will pollutants from roads or herbicides from lawns run into the planting bed?
9. **STORMWATER:** Are you managing stormwater runoff from streets and sidewalks? What tree would work best to accommodate stormwater fluxes or wet soil conditions?
10. **HABITAT:** Do you to provide wildlife habitat? Plant tree, shrub, and groundcover species to create diverse vegetation layers and broad range of bloom types and times. Provide multiple individuals of a given species.

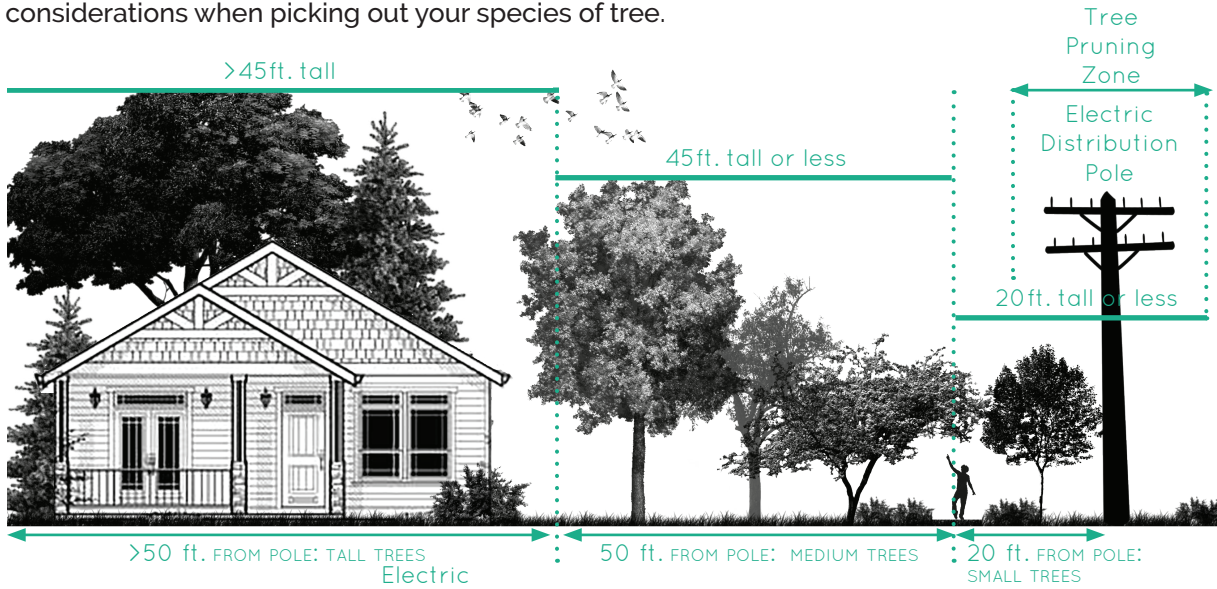
BASIC SPACING GUIDE

TREE SIZE	SPACING PLANT MASSINGS	MIN. SPACE FROM WALL OF 1-STORY BUILDING	MIN. SPACING FROM CORNER OF 1-STORY BUILDING
Small trees (30' or less)	6 - 15'	8 - 10'	6 - 8'
Medium trees (30' - 70')	30 - 40'	15'	12'
Large trees (70' - or more)	40 - 50'	20'	15'

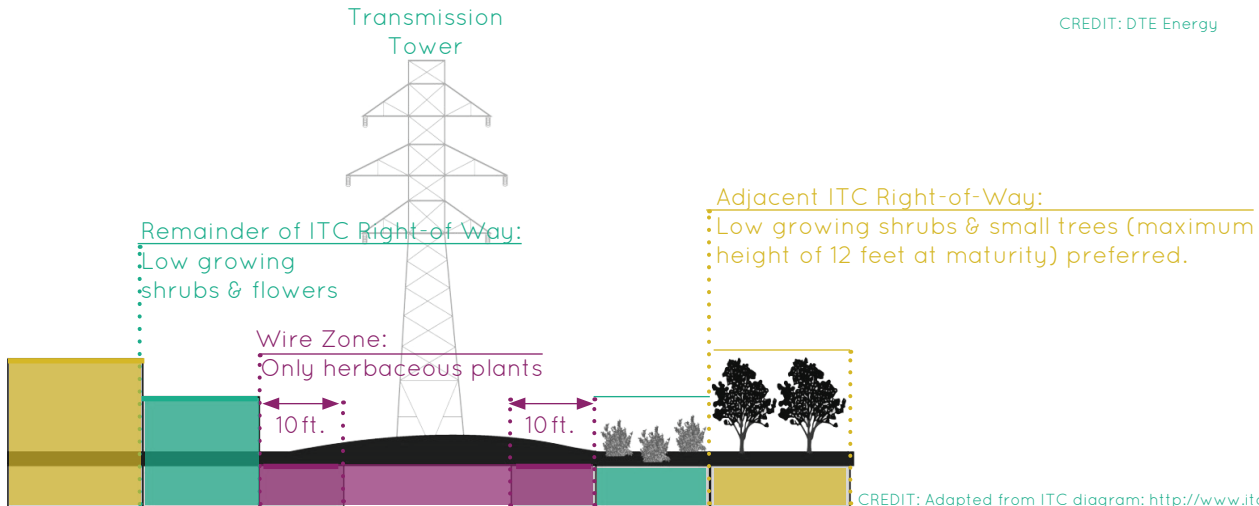
SOURCE: <https://www.arborday.org/trees/righttreeandplace/size.cfm>

HEIGHT & DISTANCE TO STRUCTURES

Proximity to utility lines is an important factor when considering tree species. Here are some height and distance considerations when picking out your species of tree.

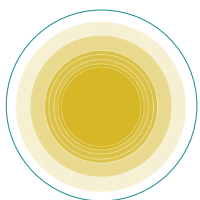


CREDIT: DTE Energy



CREDIT: Adapted from ITC diagram: <http://www.itc-holdings.com/>

SUN REQUIREMENTS



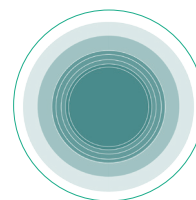
FULL SUN | 6 - 8 HOURS

At least 6 hours of direct sunlight ranging up to 8 - 12 hours



PARTIAL SUN | 3 - 6 HOURS

At least 3 hours of direct sunlight, and up to 4 - 8 hours, depending on exposure. Receives dappled light when not in direct sunlight.

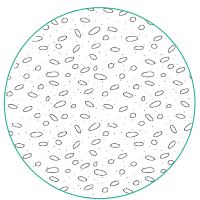


FULL SHADE | < 3 HOURS

Filtered sunlight, plants should receive less than 3 hours of direct sun each day. Full shade plants prefer low intensity light.

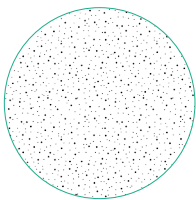
SOIL REQUIREMENTS

Thoroughly wet a patch of soil then let it dry for a day. Pick up a handful of soil and squeeze it firmly. If the soil remains in a tight ball and is a bit slippery, you have a clay soil. If the soil is gritty and doesn't hold its shape or simply crumbles, you have sandy soil. If the soil is slightly crumbly, but stays in a loose ball, you have ideal loam.



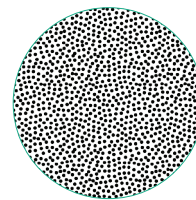
SANDY

Dry and gritty to the touch because the particles have huge spaces between them. Drains rapidly, warms quickly in spring, and organic matter amendments may be needed to improve nutrient availability.



LOAM

Dark in color, soft, dry and crumbly in your hands. Holds water and nutrients but drains well. The feel test for loam yields a smooth, partly gritty, partly sticky ball that crumbles easily.

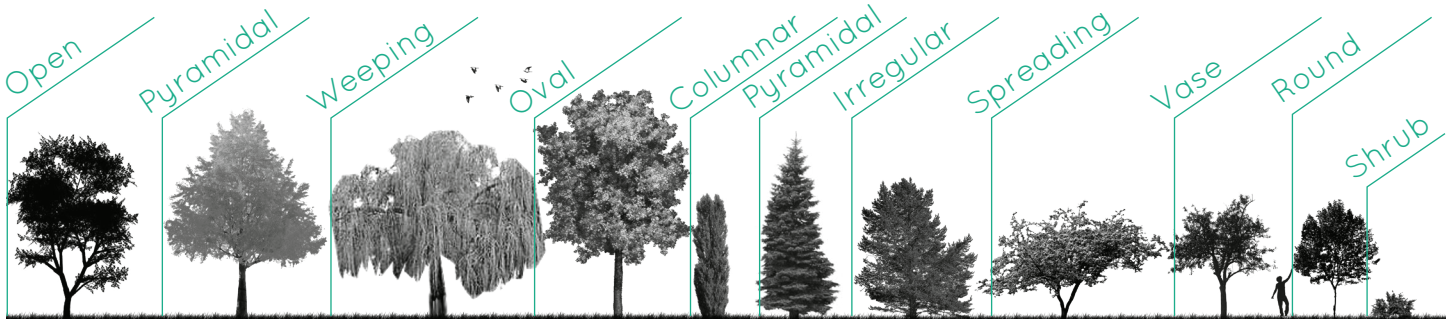


CLAY

Drains slowly. Can turn compact during summer months. Moistened soil rolls up easily and forms ball shape. Organic matter amendments may be needed to improve nutrient availability and soil structure.

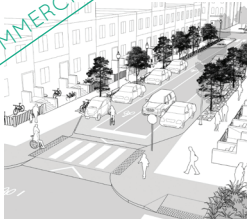
FORM

What tree form or shape will work best for your parking lot? Will it create shade, absorb stormwater, or add to the biodiversity of your parking lot? Consider what you'd like the purpose of your tree to be as you think about tree species and their different forms.



WHAT'S THE CONTEXT?

COMMERCIAL



RESIDENTIAL



PARKING LOT



WHAT'S THE

PURPOSE?

CHECK ALL PLANTING GUIDELINES

WHAT TREE IS APPROPRIATE?

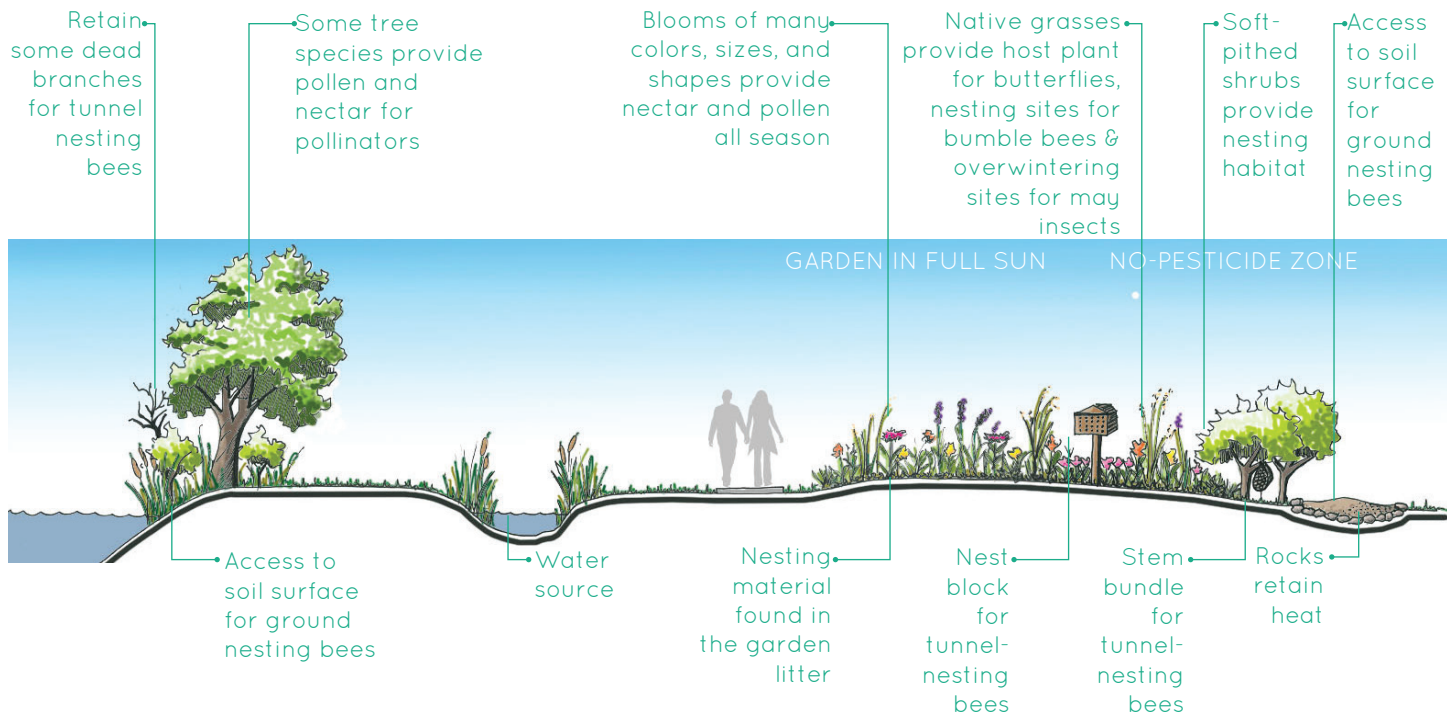




DESIGN CONSIDERATIONS FOR POLLINATORS

PLANTING FOR POLLINATOR HABITAT

Native plants should vary in bloom time, size, color, shape, and habitat. Flowers should be present throughout the growing season including early spring and late fall. Different colors of flowers attract different types of pollinators and different flower shapes make nectar available to short - and long-tongue species. Including both tall and short plants in the garden provides three-dimensional shelter habitat. At least 10 native plant species and 1 species of warm-season grass should be included to attract a diversity of pollinators, host plants for butterflies, nesting sites for bumble bees, and overwintering sites for many insects. Pollinators require secure places during their dormant or hibernating months. These could be leaf litter, logs, or rocks protected from prevailing winds and rain. The use of pesticides in gardens and managed landscapes is a major threat to pollinators. Pesticides should be avoided in pollinator habitat.



SOURCE: The Xerces Society Guide, Attracting Native Pollinators, Protecting North America's Bees and Butterflies. Storey Publishing. North Adams, MA. 2011.

SIZE & STRUCTURE

Trees, flowers and native grasses provide nectar and pollen, host pollinator larvae, and offer protection from bad weather and predators. Plant size is a factor when selecting plants and designing gardens. Size is more than just height, it relates to how the plant spreads out, the density of a plant, and the plant footprint. Its spread is measured at its widest part from leaf tip to leaf tip at maturity. Consider these variables when planting as they create microclimates that pollinators need.

Andropogon gerardii
Big Bluestem



Provides nesting materials / structure for native bees, attracts butterflies
Host plant: Delaware skipper, Dusted skipper, Common wood-nymph

Schizachyrium scoparium
Little Bluestem



Provides nesting materials / structure for native bees, attracts butterflies
Host plant: Ottoe skipper, Indian skipper, Dusted skipper, Crossline skipper, Cobweb butterfly, Dixie skipper

Sorghastrum nutans
Indian Grass



Provides nesting materials / structure for native bees, attracts butterflies
Host plant: Pepper and Salt skipper

Panicum virgatum
Switchgrass



Provides nesting materials / structure for native bees, attracts butterflies
Host plant: Tawny-edged skipper, Delaware skipper

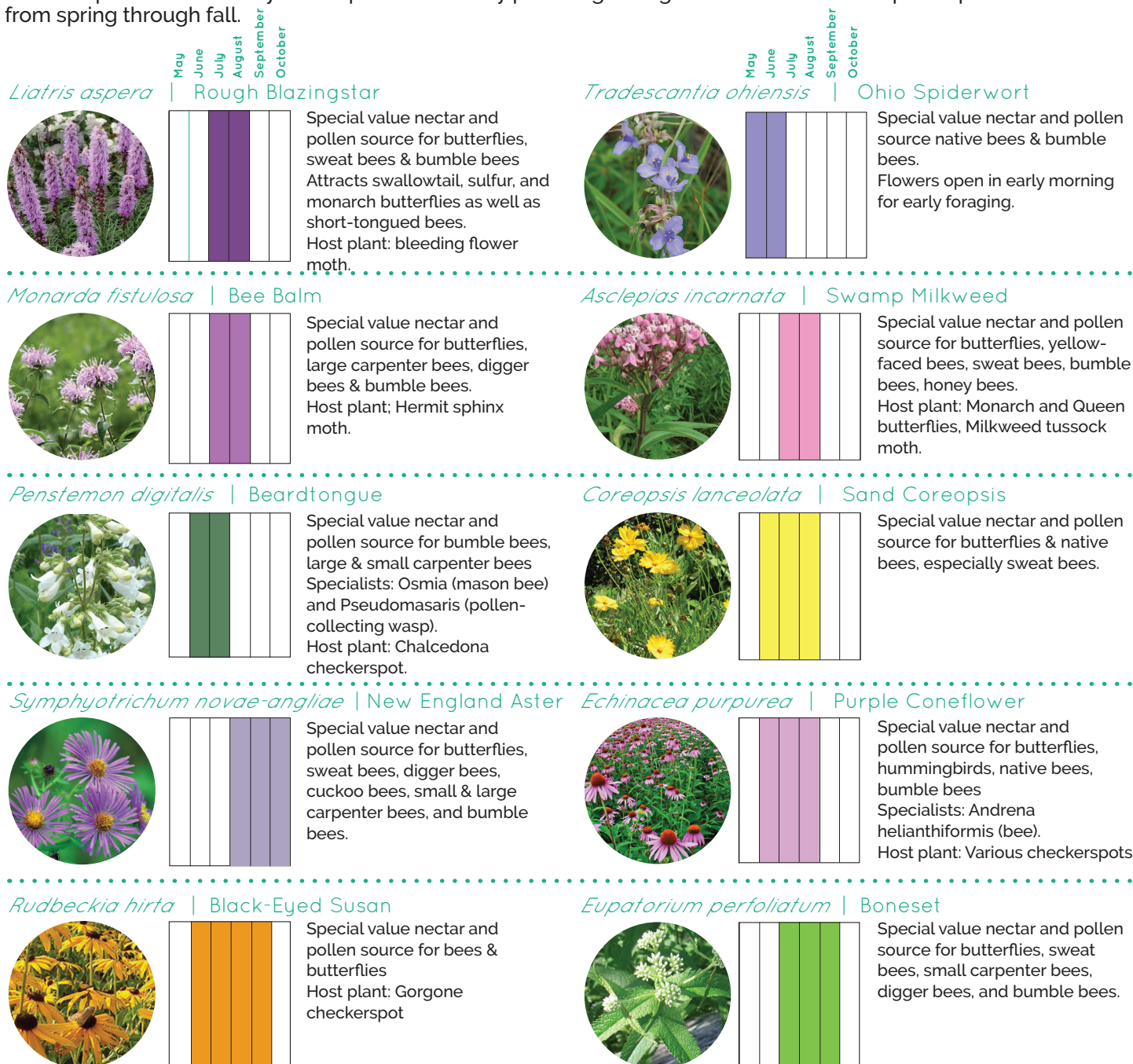
FLOWER SHAPE

Plants and pollinators have co-evolved physical characteristics that make them more likely to interact successfully. The plants benefit from attracting a particular type of pollinator to its flower, ensuring that its pollen will be carried to another flower of the same species and hopefully resulting in successful reproduction. The flower shape correlates to what type of pollinator visits it.



BLOOM COLOR & PERIOD

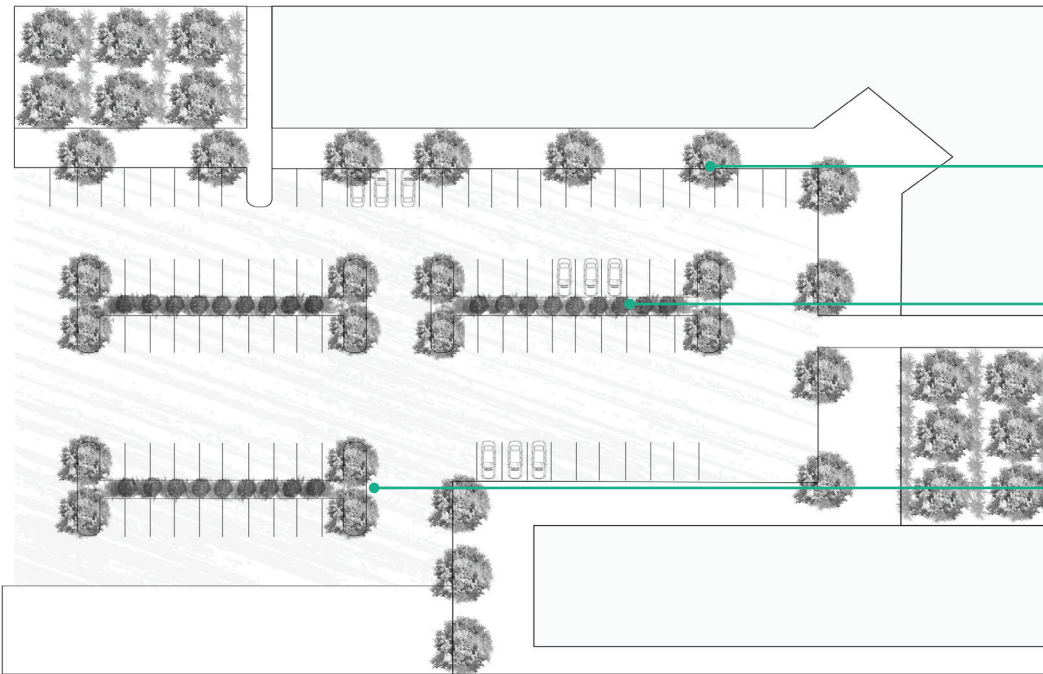
Enhance pollinator diversity and improve habitat by providing a range of bloom colors and plant species that bloom from spring through fall.





PARKING LOT | COMMERCIAL, RETAIL, MANUFACTURING, & INSTITUTIONAL

EXAMPLE PARKING LOT PLAN



Trees do not drop large fruit or seeds.

Tree species appropriate for stormwater runoff, salt, and road pollutants from cars. Can handle influxes of water and periods of drought.

Tree species are tolerant of hot ambient temperatures created by asphalt in warmer months.

EXAMPLE PARKING LOT CROSS-SECTION



Lower growing shrubs and groundcovers create clear visibility across parking lot, while bioswales instead of raised islands infiltrate stormwater.



VII. RECOMMENDED SPECIES

PARKING LOT PLANTING SPECIES CHARACTERISTICS MATRIX

COMMON NAME	SCIENTIFIC NAME	DECIDUOUS (D)/ EVERGREEN (E)	HEIGHT & SPREAD	SUN (S)/ PARTIAL SHADE (PS)/ SHADE (SH)	SOIL MOISTURE: DRY (D), AVG. (A), WET (W)
CANOPY TREE					
Northern hackberry	<i>Celtis occidentalis</i>	D	H: 40' - 60' S: 40' - 50'	S, PS	A
European hornbeam	<i>Carpinus betulus</i>	D	H: 40' - 60' S: 20' - 30'	S, PS, SH	D, A
Hardy rubber tree	<i>Eucommia ulmoides</i>	D	H: 40' - 60' S: 35' - 40'	S	D, A
Ginkgo	<i>Ginkgo biloba</i>	D	H: 50' - 80' S: 30' - 40'	S	D, A
Thornless honeylocust	<i>Gleditsia triacanthos var. inermis</i>	D	H: 30' - 70' S: 30' - 70'	S	D, A, W

The tree species and cultivars on this list should not be used exclusively for replacement planting or reforestation of large areas. The diversity of all tree species on individual streets, in neighborhoods, and in the entire community should be taken into consideration. Monocultures should be avoided. The tree species and cultivars on this list are not the only suitable trees for planting in Macomb County, but are intended to be used as a starting point. There are many more excellent native and non-native shade and ornamental trees that can be planted. Please contact your local Michigan State University Extension office or Natural Resource Conservation Service for additional recommendations. The Green Macomb Urban Forest Partnership maintains additional guidance and updated recommended species available at <http://green.Macombgov.org/>.

GROWTH RATE	BLOOM TIME	BLOOM COLOR	NOTES
Fast	May	Green	Native; tolerates sandy to clay & acid to basic compacted soils, air pollution, & occasional flooding; salt tolerant & heat/drought resistant; oval/rounded form; light yellow fall color; edible, persistent fruit; bird habitat, butterfly larval host; bark provides winter interest
Moderate	April	Greenish yellow	Non-native; grows on variety of soil textures & pH; salt, drought, pollution, & shade tolerant; narrow form cultivars available; yellow fall color
Moderate	May	Brown	Non-native; tolerant of many soil types & pH adaptable; salt & drought tolerant; attractive summer foliage
Moderate	March-April	Green	Non-native; will grow in a range of soil types; tolerates salt, drought, high wind, air pollution, & high pH; pyramidal/rounded form with narrow cultivars available; yellow fall color; plant only male trees
Fast	May-June	Greenish yellow	Native; salt & high pH tolerant & heat/drought resistant; rounded form with many cultivars available; provides light, filtered shade & doesn't make much of a mess in the fall; thornless variety; bird & small mammal habitat

COMMON NAME	SCIENTIFIC NAME	DECIDUOUS (D)/ EVERGREEN (E)	HEIGHT & SPREAD	SUN (S)/ PARTIAL SHADE (PS)/ SHADE (SH)	SOIL MOISTURE: DRY (D), AVG. (A), WET (W)
CANOPY TREE					
Pin oak	<i>Quercus palustris</i>	D	H: 60' - 70' S: 40' - 50'	S	D, A, W
Bald cypress	<i>Taxodium distichum</i>	D	H: 50' - 70' S: 25' - 35'	S	D, A, W
Silver linden	<i>Tilia tomentosa</i>	D	H: 50' - 70' S: 30' - 50'	S	A
Valley Forge elm	<i>Ulmus americana</i> 'Valley Forge'	D	H: 60' - 80' S: 50' - 60'	S, PS	A, W
UNDERSTORY TREE					
Shadblow serviceberry	<i>Amelanchier canadensis</i>	D	H: 8' - 20' S: 15' - 20'	S, PS	D, A, W
Eastern redbud	<i>Cercis canadensis</i>	D	H: 12' - 25' S: 25' - 35'	S, PS	A

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GROWTH RATE	BLOOM TIME	BLOOM COLOR	NOTES
Moderate	May	Red/yellow	Native; wet site/drought, high wind, and pollution tolerant; use <i>Quercus ellipsoidalis</i> instead if soils are high pH; pyramidal form; faster growth rate than most oaks; russet/red/bronze fall color; bird & small mammal habitat, butterfly larval host
Moderate	March-April	Green, brown cones	Native to the south; very adaptable to variety of site conditions including wet soils but not high pH; tolerates salt & high wind; conical/oval form with many cultivars available; provides light, filtered shade; bronze yellow/rusty orange fall color
Fast	June-July	Yellowish white	Non-native; will grow in a range of soil types; tolerates wind, salt, range in soil pH, & air pollution; rounded/pyramidal form with compact cultivars available; fragrant flowers
Moderate	March-April	Greenish red	Native; grows well under variety of conditions & range in pH; salt & compacted soil tolerant; upright, arching, v-shaped form; Dutch Elm Disease resistant cultivar; bird & small mammal habitat
Slow	March-April	White	Native to south & east; adaptable to most soil types; salt tolerant; rounded/multi-stemmed form; early spring flowers; edible fruit; excellent red/orange/yellow fall color; bark provides winter interest; early season pollinator & bird habitat, butterfly larval host
Slow	April-May	Pink	Native; salt, shade & high pH tolerant; early spring flowers; rounded form; persistent fruit provides winter interest; early season pollinator & bird habitat, butterfly larval host

COMMON NAME	SCIENTIFIC NAME	DECIDUOUS (D)/ EVERGREEN (E)	HEIGHT & SPREAD	SUN (S)/ PARTIAL SHADE (PS)/ SHADE (SH)	SOIL MOISTURE: DRY (D), AVG. (A), WET (W)
UNDERSTORY TREE					
Thornless cockspur hawthorn	<i>Crataegus crusgalli</i> <i>var. inermis</i>	D	H: 20' - 30' S: 15' - 20'	S, PS	D, A
Crabapple	<i>Malus spp.</i>	D	H: 6' - 25' S: 10' - 15'	S	D, A
Choke cherry	<i>Prunus virginiana</i>	D	H: 10' - 30' S: 15' - 20'	S, PS	D, A
Japanese tree lilac	<i>Syringa reticulata</i>	D	H: 20' - 30' S: 15' - 20'	S	D, A
SHRUB					
Leadplant	<i>Amorpha canescens</i>	D	2' - 3'	S	D, A
New Jersey tea	<i>Ceanothus americanus</i>	D	1' - 3'	S, PS	D, A

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	GROWTH RATE	BLOOM TIME	BLOOM COLOR	NOTES
	Slow	May	White	Native; salt tolerant & heat/drought resistant; broad-rounded form with horizontal branching; flowers nice in appearance but disagreeable odor up-close; bronze/purple red fall color; thornless variety; should not be planted near members of the Juniperus genus to prevent rust & blight diseases; pollinator, bird, & small mammal habitat
	Moderate	April-May	White, pink, red	Most species non-native; salt & drought tolerant; not tolerant of high pH soils; rounded form; numerous height, form, flower color, & fruitless cultivars available but Asiatic forms more insect & disease resistant (<i>Malus floribunda</i> , <i>M. sargentii</i> , & <i>M. x zumi</i>); showy flowers make it excellent specimen or mass planting tree; red/orange/yellow fall color; small mammal & pollinator habitat
	Fast	May-June	White	Native; salt tolerant & heat/drought resistant; single or multi-stemmed form; spreads by suckering; bird, small mammal, & pollinator habitat, butterfly larval host
	Moderate	June	White	Non-native; tolerates salt, drought, shade, & range of soil pH; oval/rounded form; fragrant flowers; one of the toughest lilacs
	Slow	June-Aug	Purple	Native; salt tolerant & heat/drought resistant; striking gray-green foliage; pollinator habitat, butterfly larval host
	Slow	May-June	White	Native; adaptable to variety of soils & tolerant of hot, dry sites & salt; good for massing & slope planting; pollinator habitat, butterfly larval host

COMMON NAME	SCIENTIFIC NAME	DECIDUOUS (D)/ EVERGREEN (E)	HEIGHT & SPREAD	SUN (S)/ PARTIAL SHADE (PS)/ SHADE (SH)	SOIL MOISTURE: DRY (D), AVG. (A), WET (W)
SHRUB					
Shrubby cinquefoil	<i>Dasiphora fruticosa</i>	D	2' - 3'	S, PS	D, A, W
Fragrant sumac	<i>Rhus aromatica</i>	D	2' - 5'	S	D, A
Shining sumac	<i>Rhus copallina</i>	D	6' - 12'	S	D, A
Meadowsweet	<i>Spiraea alba</i>	D	3' - 6'	S, PS	A, W
Arrowwood viburnum	<i>Viburnum dentatum</i>	D	5' - 12'	S, PS	A, W
PERENNIAL GROUNDCOVER					
Wild columbine	<i>Aquilegia canadensis</i>	D	1' - 3'	S, PS, SH	A
Butterfly weed	<i>Asclepias tuberosa</i>	D	1' - 3'	S	D, A
Nodding bur-marigold	<i>Bidens cernua</i>	D	1' - 4'	S	A, W

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GROWTH RATE	BLOOM TIME	BLOOM COLOR	NOTES
Slow	June-Sept	Yellow	Native; tolerates a wide range in site conditions including high pH & is very durable; makes a good hedge/border; grey/green foliage & extended flowering provide broad seasonal interest; pollinator habitat
Moderate	May-June	Yellow	Native; adaptable to variety of soils including high pH & tolerant of hot, dry sites; low-growing cultivars available; good for massing & slope planting; orange/red/purple fall color; bird & small mammal habitat
Moderate	June	Yellow	Native; salt tolerant & heat/drought resistant; rounded, clonal form spreads by suckering; interesting bright red fruits; brilliant red/red-purple fall color; interesting specimen, shrub border, large mass, or bank cover; bird, small mammal & pollinator habitat
Fast	June-Aug	White	Native; salt & wet site tolerant; pollinator habitat
Moderate	May-June	White	Native; durable and adapted to varied soils; good edge or screen; bird & pollinator habitat, butterfly larval host
	May-July	Red & yellow	Native; shade & salt tolerant; pollinator habitat, butterfly larval host
	June-July	Orange	Native; salt & drought tolerant; bird & pollinator habitat, butterfly larval host
	June-Oct	Yellow	Native; salt & wet site tolerant; small mammal, bird, & pollinator habitat

COMMON NAME	SCIENTIFIC NAME	DECIDUOUS (D)/ EVERGREEN (E)	HEIGHT & SPREAD	SUN (S)/ PARTIAL SHADE (PS)/ SHADE (SH)	SOIL MOISTURE: DRY (D), AVG. (A), WET (W)
PERENNIAL GROUNDCOVER					
Brown fox sedge	<i>Carex vulpinoidea</i>	D	2' - 3'	S, PS	A, W
Sand coreopsis	<i>Coreopsis lanceolata</i>	D	1' - 2'	S	D, A
Purple love grass	<i>Eragrostis spectabilis</i>	D	1' - 2'	S	D
Common boneset	<i>Eupatorium perfoliatum</i>	D	3' - 5'	S, PS	A, W
Torrey's rush	<i>Juncus torreyi</i>	D	1' - 2'	S	A, W
Switchgrass	<i>Panicum virgatum</i>	D	3' - 5'	S, PS	D, A, W
Virginia creeper	<i>Parthenocissus quinquefolia</i>	D	< 1'	S, PS, SH	D, A, W
Woolgrass	<i>Scirpus cyperinus</i>	D	3' - 6'	S	W
Showy goldenrod	<i>Solidago speciosa</i>	D	2' - 5'	S	D, A
Smooth blue aster	<i>Symphotrichum laeve</i>	D	2' - 4'	S	D, A
Hoary vervain	<i>Verbena stricta</i>	D	2' - 4'	S, PS	D, A

The tree species and cultivars on this list should not be used exclusively for replacement planting or reforestation of large areas. The diversity of all tree species on individual streets, in neighborhoods, and in the entire community should be taken into consideration. Monocultures should be avoided. The tree species and cultivars on this list are not the only suitable trees for planting in Macomb County, but are intended to be used as a starting point. There are many more excellent native and non-native shade and ornamental trees that can be planted. Please contact your local Michigan State University Extension office or Natural Resource Conservation Service for additional recommendations. The Green Macomb Urban Forest Partnership maintains additional guidance and updated recommended species available at <http://green.Macombgov.org/>.

GROWTH RATE	BLOOM TIME	BLOOM COLOR	NOTES
	May-June	Green	Native; tolerant of wide range of site conditions; clumped form; seed heads provide late spring interest; pollinator & small mammal habitat
	June-Aug	Yellow	Native; salt & drought tolerant; pollinator & small mammal habitat
	June-July	Green	Native; clumped form; salt & drought tolerant; seed heads have rich purple fall color; pollinator & small mammal habitat
	July-Sept	White	Native; salt & wet site tolerant; readily reseeds itself; pollinator habitat
	June-July	Green	Native; salt & wet site tolerant; bird & small mammal habitat
	July-Aug	Green	Native; very adaptable to various site conditions & salt tolerant; open seed heads add late-season visual interest; bird, small mammal, & pollinator habitat, butterfly larval host
	July-Aug	Green	Native; salt tolerant; groundcover as well as climbing vine; pretty red fall color; bird & small mammal habitat
	June-Aug	Green	Native, wet site & salt tolerant; arching seed heads provide visual interest; bird, small mammal, & pollinator habitat
	Aug-Oct	Yellow	Native; drought & salt tolerant; late-season pollinator & beneficial predatory insect support
	Aug-Oct	Lavender blue	Native; very adaptable to various site conditions including salt; late-season pollinator support
	July-Sept	Purple-blue	Native; very adaptable to various site conditions including salt & drought; pollinator habitat



VIII. DO NOT PLANT LIST

INVASIVE SPECIES COMMONLY USED & DISTRIBUTED AS ORNAMENTALS

Some of these plants may occur on suggested plant lists for individual communities, but it is recommended that they are not planted in any community in Macomb County.

COMMON NAME	SCIENTIFIC NAME
Amur maple	<i>Acer ginnala</i>
Norway maple	<i>Acer platanoides</i>
Tree of Heaven	<i>Ailanthus altissima</i>
Black alder	<i>Alnus glutinosa</i>
Porcelain-berry	<i>Ampelopsis brevipedunculata</i>
Japanese angelica tree	<i>Aralia elata</i>
Japanese barberry	<i>Berberis thunbergii</i>
Oriental bittersweet	<i>Celastrus orbiculatus</i>
Sweetautumn clematis	<i>Clematis terniflora</i>
Russian-olive	<i>Elaeagnus angustifolia</i>
Autumn-olive	<i>Elaeagnus umbellata</i>
Winged wahoo, Burning bush	<i>Euonymus alatus</i>
Wintercreeper euonymus	<i>Euonymus fortunei</i>
Glossy buckthorn	<i>Frangula alnus</i>
Baby's breath	<i>Gypsophila paniculata</i>
English ivy	<i>Hedera helix</i>
Dame's rocket	<i>Hesperis matronalis</i>
Yellow flag	<i>Iris pseudacorus</i>
Common privet	<i>Ligustrum vulgare</i>
Eurasian honeysuckles	<i>Lonicera spp. (e.g. L. japonica; L. x bella; L. maackii; L. morrowii; L. tatarica)</i>
Birdfoot trefoil	<i>Lotus corniculatus</i>

COMMON NAME	SCIENTIFIC NAME
Moneywort, Creeping Jenny	<i>Lysimachia nummularia</i>
Purple loosestrife	<i>Lythrum salicaria</i>
Japanese silver, Maiden grass	<i>Miscanthus sinensis</i>
White mulberry	<i>Morus alba</i>
Reed canary grass, Ribbon grass	<i>Phalaris arundinacea</i>
Amur corktree	<i>Phellodendron amurense</i>
Yellow-groove ("Running") Bamboo	<i>Phyllostachys aureosulcata</i>
Black pine	<i>Pinus nigra</i>
Japanese & Giant knotweed	<i>Polygonum cuspidatum</i> & <i>P. sachalinense</i>
Kudzu	<i>Pueraria lobata</i>
Callery pear	<i>Pyrus calleryana</i>
Common buckthorn	<i>Rhamnus cathartica</i>
Black jetbead	<i>Rhodotypos scandens</i>
Black locust	<i>Robinia pseudoacacia</i>
Multiflora rose	<i>Rosa multiflora</i>
Crown-vetch	<i>Securigera varia</i>
Chinese elm	<i>Ulmus parvifolia</i>
Siberian elm	<i>Ulmus pumila</i>