






MICHIGAN COMMUNITY

TREE SPECIES SELECTION GUIDE

DEPARTMENT OF NATURAL RESOURCES · DNR · MICHIGAN ®

Urban & Community Forestry

Michigan Community Tree Species Selection Guide

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Acknowledgements

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Michigan Community Tree Species Selection Guide

Introduction

Selecting the right tree for the right place is one of the most important steps in any tree planting project. Whether planting in a park, along a street, in a residential neighborhood or on a campus, thoughtful planning can save time, reduce costs, and minimize long-term maintenance. To ensure that trees thrive and deliver long-term benefits, careful planning and informed species selection are essential.

The **Michigan Community Tree Species Selection Guide (MiCoTSS)** is designed to help communities across the state make informed tree-planting decisions. It offers practical, science-based guidance for selecting tree species based on local site conditions, community needs, and long-term goals. The guide is especially useful for individuals with limited tree knowledge, providing clear concepts and easy-to-follow guidance to support successful planting efforts.

This guide focuses on species commonly available in Michigan nurseries. Because the state spans multiple hardiness zones and includes a wide range of climatic conditions, not every tree that can grow in Michigan is included here. Instead, the guide emphasizes species that are well-suited for **managed landscapes**—settings that differ significantly from natural forests. In urban and suburban areas, trees are typically planted as individuals to meet specific objectives such as providing shade, improving aesthetics, managing stormwater, reducing noise, or enhancing safety. Examples of managed landscapes include:

- Downtowns and village centers
- Residential streets and neighborhoods
- School, business, or hospital campuses
- Parks and urban green spaces
- Cemeteries
- Parking lot green spaces
- Street medians and highway corridors
- Drainage canals
- Private yards

This guide **is not intended** for use in ecological restoration or riparian stabilization efforts, where species selection and planting strategies require a different approach.

Introduction continued

Why planning matters

Trees are **living infrastructure** that take years to grow, mature and provide their full range of benefits. Once established, trees offer decades of valuable services: cooling neighborhoods, improving air quality, reducing stormwater runoff, and enhancing quality of life, to name just a few. However, trees that grow within communities face unique challenges — compacted soils, limited root space, air pollution, drought, salt, and physical damage. **Choosing the right species, planted in the right place, and planting for the right reason gives them the best chance to survive and thrive.**

The most successful planting projects begin with clear goals and a strong understanding of local conditions. Poor planning can lead to expensive maintenance, early tree loss, and negative public sentiment. But with the right information and approach, your planting projects can be long-lasting community assets.

Foundations of successful tree-planting projects

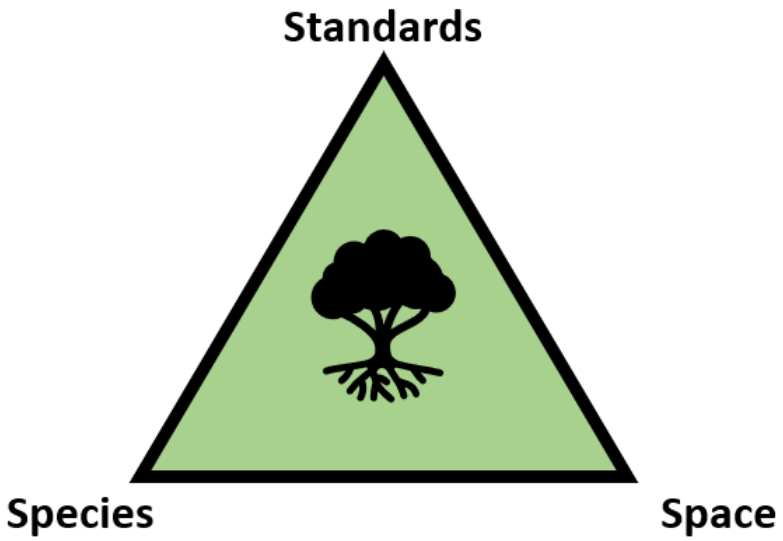
Three core characteristics will support long-term tree success:

Standards: Local ordinances, policies, and design standards that prioritize tree canopy health, planting quality and maintenance over time.

Space: The physical conditions of the site where the tree will be planted, including soil volume, drainage, rooting space and infrastructure.

Species: Ensuring that the selected species' maintenance needs, tolerances, and growth form are suitable to the site and purpose.

It is essential that all three of these characteristics are considered during the planning and species selection process. Weakness or lack of consideration in any of these areas can lead to poor outcomes. Thoughtful attention during the planning and planting phases will increase the lifespan and impact of your tree investment.



How to use this guide

MiCoTSS is meant to serve as a practical tool to support the tree selection process. It should be used alongside guidance from local arborists and landscape professionals, planning documents, ordinances and other tree research to guide your decisions. Below is a general process to follow:

Define the purpose of the planting
Identify the primary goals of your planting project. For example, are you trying to increase shade for pedestrians, reduce stormwater runoff, beautify a streetscape or create wildlife habitat? Clearly defining your purpose and objectives will help narrow down suitable species.

Understand your site conditions
Evaluate site-specific characteristics that affect species suitability. Consider overhead utility lines, available soil volume, drainage, sun exposure, existing infrastructure, road salt exposure and other constraints.

Identify your plant hardiness zone
Determine your current and projected USDA plant hardiness zone, as well as any relevant regional or local climate factors that may influence tree survival and performance now and in the decades ahead.

Review community tree inventory data
If your community has a tree inventory, use it to identify overrepresented or underrepresented species in the tree canopy. Diversifying the species you choose to plant can help reduce risks associated with pests, disease, and climate stress.

Check local rules and permissions
Before planting, confirm land ownership or easements and check for historic or landmark protections. Coordinate with your planning, zoning, or public works departments to identify planting restrictions and right-of-way boundaries. Always confirm that species planned to be planted are not prohibited within the community.

Collaborate with local experts
Consult certified arborists, landscape professionals, and local tree boards. Use this guide as a foundational reference to guide conversations and decisions.

It's natural to feel overwhelmed with so many factors to consider—but don't worry, you've got this! You don't have to be a tree expert to make good decisions.

Use this guide as a tool, lean on local resources, and remember: Every tree you plant today will benefit your community for generations to come.

Guiding Principles for Tree Planting in Michigan

This guide is intended to support the planning and design of tree-planting projects in community landscapes with the goal of building a healthy, resilient, and sustainable community forest. The following guiding principles provide a foundation for making informed, strategic decisions that maximize the long-term benefits of trees in Michigan communities.

Recognize the full value of trees

While trees are often planted for their beauty, they provide many ecological, economic and human health benefits that go beyond aesthetics. Trees should be viewed as vital, cost-effective infrastructure. When properly maintained, they offer increasing value over their lifetime. A list of tree benefits can be found in the Benefits of Trees section of this guide.

Variety is key

Planting a wide variety of tree species across streets, yards, and public green space strengthens the health and resilience of the urban forest. Just as ecosystems thrive with a mix of plants and animals, communities benefit when no single tree species dominates the canopy. Greater diversity helps reduce the risk of widespread damage from pests, diseases, or environmental stress. This guide includes a broad selection of recommended tree species that support this approach. If your community has a public tree inventory, use it to identify species that are overplanted or underrepresented and guide your planting decisions accordingly.

Consider native and non-natives species

Native species are generally preferred, as they are well adapted to the local environment and less likely to disrupt natural ecosystems. However, due to changing hardiness zones and environmental conditions, non-native (but non-invasive) species may be suitable or even preferred in some situations. Avoid planting ornamental or non-native species in areas adjacent to natural wetlands, woodlands, or waterways. This helps prevent unwanted spread into natural areas.

Plan for the long-term

Trees are living infrastructure and a long-term investment in the community. Because they take years to grow and mature, planting efforts should be designed with at least a 20-year horizon in mind. To ensure continued care, long-term plans should be developed, documented and passed down to future stewards. Clearly communicate the lasting value of these investments to decision makers and the public to ensure that tree initiatives are supported and sustained well beyond the initial planting.

Be adaptable

This guide was developed based on current science and professional expertise relevant to tree species in Michigan. However, factors such as climate change, tree pests, and other stressors may impact the long-term use of certain species. Guidance and best practices will evolve over time.

Benefits of trees

A tree provides many benefits to the space where it is planted, whether they are economic, social, aesthetic, environmental or a combination of these. It is important to identify which benefits you would like to maximize before selecting a species, as some trees will meet certain criteria better than others. The goal should be planning for the long-term health and success of trees in the same way we plan for road, sewer, and utility infrastructure. The benefits with trees increase over time, which makes it a rare instance of infrastructure that appreciates in value. Consider and understand the long-term planning and responsibility of trees before planting.

Economic benefits

- Stabilize property values
- Encourage patronage of downtown retail and tourism by creating an inviting environment
- Increased spending in shaded commercial districts
- Reduced energy costs
- A living infrastructure that increases economic benefit over time

Social benefits

- Instill community pride and identity
- Provide a quiet, peaceful environment
- Offer outdoor recreation such as bird-watching
- Reduce crime and improve residents' mental health
- Increase public health through filtration of air and water
- Slow traffic when planted near roadways
- Improve community aesthetics

Aesthetics

- Provide color, flowers, or fruit
- Complement a building, landscape, or beautify an area
- Encourages community members to support and appreciate beautiful trees

Environmental improvement

- Reduce soil erosion
- Intercept and filter stormwater
- Improve air and water quality
- Offer shade in the summer
- Reduce winds in the winter
- Provide food and shelter for wildlife
- Reduce noise by buffering sound
- Increase plant diversity
- Mitigate impacts of climate change
- Reduce heat impacts
- Increase community resilience to climate change
- Provide resources for wildlife

Avoidable negative impacts

You should also consider long-term problems that could arise with certain trees. Not all species traits will match your desired outcome.

Examples of potentially undesirable traits include:

- Litter with messy fruit, branches, or large leaves
- Conflicts with utilities
- Costs for establishment, maintenance, and removal
- Flowers with unpleasant odors
- Unintended spread of invasive species
- Pollen/allergen concerns

Calculate Impact!

Visit the i-Tree online suite of tools to learn more about the benefits provided by the trees around your home and neighborhood.

www.iTreetools.org

Climate, Zones and Conflicts

Shade competition

The ability of the leaves in a tree's crown to capture sunlight and produce food for the tree plays a critical role in the overall success of that tree. The roots must be able to support the crown with water and nutrients, and the crown must be able to provide the energy needed to grow through photosynthesis. Consider any characteristics of your site, such as shade from structures and other trees that might inhibit the growth of a healthy tree crown. In general, trees planted on the southwest side of structures usually receive more sunlight than trees on the northeast side. Be aware of the light requirements for species and the shadows other trees and structures could cast at different times of day.

USDA Plant Hardiness Zones

Exposure to elements is important to consider, because not all tree species can tolerate extreme conditions. The United States Department of Agriculture (USDA) has identified Plant Hardiness Zones that denote the average annual minimum winter temperature of a given region. Plant rating for hardiness zones is based on the plant's ability to survive over winter at the specified average minimum extreme winter temperature. The lower the temperature, the lower the zone number. These zones have changed over time and we must consider future changes when choosing what species to plant. If you garden in your free time, you might already be aware of the plant hardiness zones and know that this is your base limiting factor when choosing species. Referencing the 2023 zone map, Michigan covers zones 4a through 6b. Due to the moderating effect of the Great Lakes, coastal areas adjacent to the lakes tend to be buffered from temperature extremes. This allows for a greater range and number of species to be planted in these areas.

Picture: White Fringetree (*Chionanthus virginicus*) is native to the southeast United States but is doing just fine in this photo from East Lansing, Michigan.
This is an example of assisted migration of a southern species to Michigan.

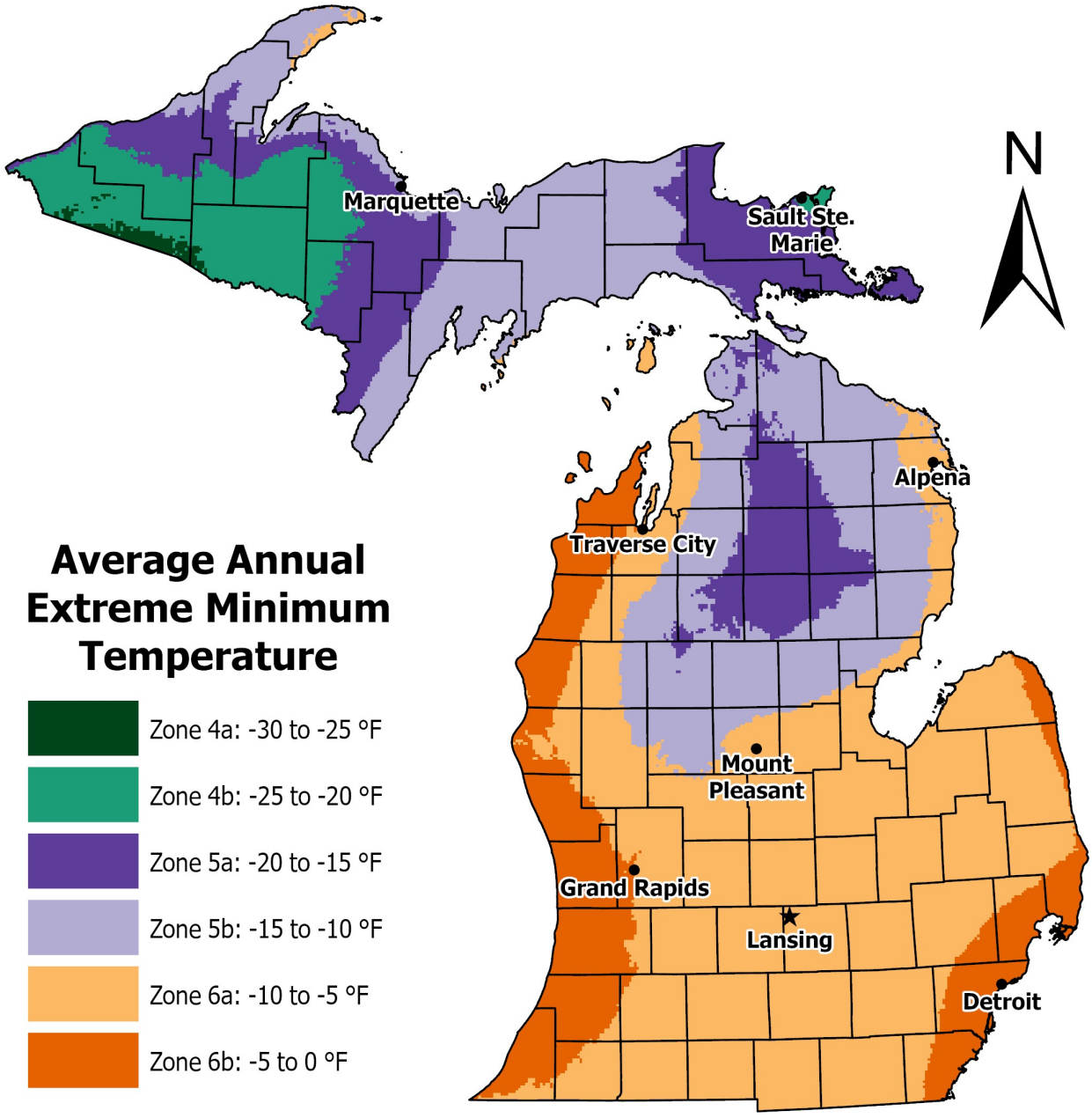
Climate adaptation

Plant Hardiness Zones are not static and change over time due to climate change. Trees live as long as we do, if not longer, so it would be appropriate to prepare for the future and plant species that would be suitable for the next zone rather than the current zone. For example, current climate models estimate that Detroit could be in Zone 7b by 2050. Projects should consider the impact climate change will have on the community's trees and what species could adapt better to those changes. Climate change disproportionately benefit invasive species, pests, and diseases over native trees. We can increase resilience to these changes by assisting migration of species in adjacent warmer climates. Placing these trees into our managed landscapes helps assure they will be better adapted.

Compatible use conflicts

When planting close to roadways, sidewalks, and businesses, consider the mature height, spread, and form of the tree you intend to plant. While some businesses might take issue with trees blocking their signage, there is no evidence to support a drop in business due to trees. In fact, there is evidence of higher foot traffic. It is important to take the concerns of stakeholders such as pedestrians, motorists, cyclists, businesses, bus lines, and utilities into consideration to minimize conflict. Coordination of expectations and benefits should be communicated to alleviate concerns.

2025 Michigan Plant Hardiness Zones



Average Annual Extreme Minimum Temperature

- Zone 4a: -30 to -25 °F
- Zone 4b: -25 to -20 °F
- Zone 5a: -20 to -15 °F
- Zone 5b: -15 to -10 °F
- Zone 6a: -10 to -5 °F
- Zone 6b: -5 to 0 °F

0 40 80 160 Miles

0 50 100 200 Kilometers

Created by the Michigan Department of Natural Resources
June 6th, 2025

Soil Considerations

The success of a tree is largely determined by the health of its root system. Roots provide the structure necessary for a tree to remain upright and transfer the water and nutrients needed for growth. Roots require water, nutrients, and oxygen to survive. If a tree's roots are constrained, damaged, or deprived of water and nutrients, health issues will eventually arise. Luckily, many of these limitations can be assessed before planting by examining the condition of the soil at your desired location. Some sites will support certain species wonderfully but will be ill-suited for others.

Soil texture

Soil texture influences a soil's relationship to water and is largely determined by the soil's relative amounts of sand, silt, and clay. Some soils can hold ample nutrients while others easily lose nutrients through leaching. Clay soils retain moisture and nutrients but are prone to compaction and drainage issues. Sandy soils drain quickly and resist compaction, but can be nutrient-poor and more prone to drought. You can determine a soil's texture by rubbing moistened soil between your fingers: Sandy soils feel gritty, clay soils feel smooth, and loamy soils are a balance of both.

Managed landscapes can sometimes contain backfilled construction debris instead of proper soil. If planting a tree in these areas, try to remove as much construction backfill as possible and replace with a more suitable, native soil for the species you plan to put there. Some tree species can tolerate construction backfill to a degree, but these trees seldom thrive.

Soil structure and compaction

The most common threat to soil health in urban areas is compaction, which destroys soil structure by reducing pore spaces needed for air, water, and roots. Common sources of compaction are heavy equipment, vehicles and foot traffic. Compaction can be mitigated by planting more tolerant tree species, altering the soil with amendments, or breaking up compacted soil with an air spade or other tools. A good rule of thumb: If there isn't grass growing in an area, it likely isn't a good area for a tree.

Drainage

Drainage is the soil's ability to intercept and remove surface or groundwater and is influenced by soil texture and structure. Clay soils often lack pore spaces to allow water to drain freely, limiting the availability of oxygen to the roots. Sandy soils with large pores have high drainage but hold little water and are only suitable for specific plant species. Soil compaction and obstacles such as bedrock and other impermeable objects beneath the soil can also inhibit drainage. The addition of organic matter (i.e. mulch) or choosing drought tolerant species is recommended for dry and quick-draining soils; managing rainwater and choosing species that can tolerate intermittent flooding is recommended for wet and slow-draining soils. Impermeable surfaces such as roads and sidewalks make it difficult for trees to intercept stormwater. Installing permeable pavement, bioswales, and rain gardens can accommodate trees in areas with impermeable surfaces without sacrificing drainage.

The area to the left shows a compacted area where grass will not grow. This can be mitigated with a cushion of mulch or use of weight distribution mats for heavy equipment during times of construction. This can be remediated by an air spade, aeration, or physical agitation using other equipment.

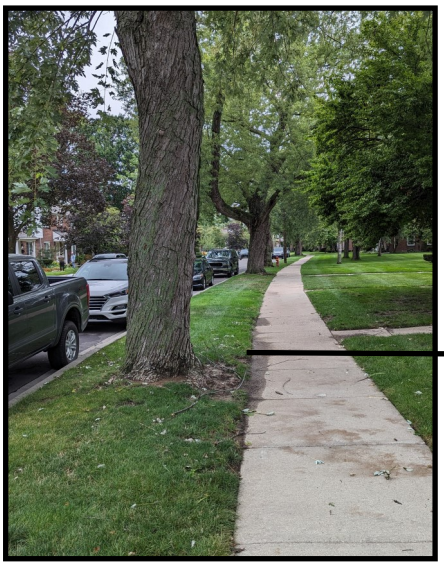
Soil Considerations continued

Soil Volume

Soil volume is the amount of soil available for root growth. Inadequate rooting space will limit the soil interactions necessary for successful plant growth. Common barriers to rooting space include sidewalks, roads, underground obstacles, utilities, and containers. Tree roots need the combination of water, oxygen, and nutrients and those can't be optimally provided if there is compaction or hardscape over the roots.

Most tree roots grow near the surface, primarily in the top 2 to 3 feet of soil. Tree roots usually spread out 1.5 to 4 times the size of the tree's canopy but will be stopped by impermeable surfaces or heavy compaction. When selecting sites, it is important to have at least 3 feet deep of uncompacted soil and a minimum square foot area of 4 feet by 4 feet. Anything less than 16 square feet should not have a tree planted but instead consider a shrub or herbaceous plants.

In situations where soil volume is restricted but greater than 16 square feet, smaller tree species with less-extensive root systems can be selected. Trees that are more tolerant of drought and heat will also fare better in these circumstances. Consult professionals if there is a need to increase available soil volume for tree roots and meet load-bearing requirements for structurally sound pavement installation.



Connected greenspace increases the amount of water and nutrients available to the tree and should be prioritized over fragmented planting sites. Yellowing leaves could be an indicator of pH issues or a nutrient deficiency.

Soil pH and Plant Nutrients

Soil pH and plant nutrients are crucial in determining a site's suitability for plant growth. Most plants require a balance of 10 to 14 essential nutrients to thrive. Nutrient deficiencies or toxicities can decrease foliage quality and growth rate, and increase susceptibility to pests and diseases. The availability of these elements to trees is affected by soil pH and organic matter content. A pH range of 5.5-7.0 is preferred by most species.

To obtain accurate measurements of soil nutrient content and pH levels, purchase a *Home Lawn and Garden Soil Test Mailer* from the nearest MSU Extension Office or online at **shop.msu.edu/products/soil-test-mailer**.

Road salt

Road salt is used to de-ice roads and sidewalks in the winter. Continuous use of salt can reduce water absorption, nutrient uptake, root growth, and long-term plant growth. Select tree species with a higher salt tolerance for planting near areas that receive regular salting. Trees within 25 feet of a regularly salted road, sidewalk, or parking lot are most susceptible. Planting farther away from, or above the grade of, the roadway can help reduce the impacts of salt accumulation on trees. If you have a tree within 25 feet of a regularly salted surface, you can plant buffer shrubs and herbaceous plants that tolerate salt better, such as aromatic sumac, to insulate the tree from salt damage.

Above Ground Considerations

Utilities

When planting, take into account the utilities above and below ground in the area. Always call MISS DIG at 811 to mark any underground utilities at least three days before planting. Tree roots will grow where water and nutrients are present. If sewage pipes, septic tanks, or stormwater infrastructure is damaged, there could be infiltration of tree roots through the cracks.

Power lines and above-ground utilities compete with trees for canopy space. Branches around power lines present a risk to safety and utility service and could cause disruption that can have dire consequences. Depending on the line type (transmission, primary, secondary, and communications) trees near them will be occasionally pruned or removed based on utility specifications.

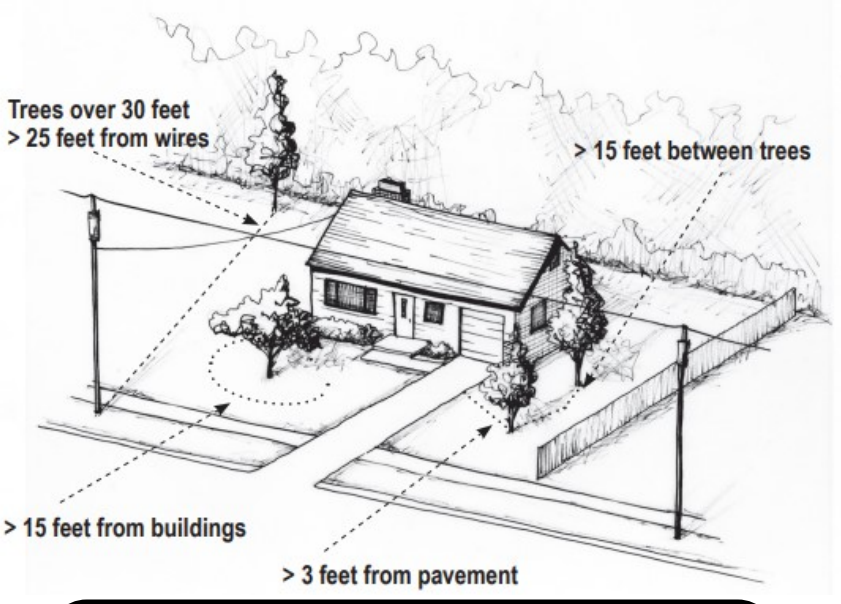
Only plant small trees and shrubs (maximum mature height of 25 feet) within 10 to 25 feet of powerlines. Anything right underneath the lines could be subjected to heavy pruning or removal during periodic utility maintenance. Check with your local utility provider for more information.

Spacing

Refer to the figure below from the USDA Tree Owner's Manual for tree spacing in the landscape. Trees planted 20 to 25 feet from each other increase competition between them, causing a more upright form. Trees planted 40 to 60 feet apart will grow wider due to availability of space and light.

Plant trees at least 15 feet from buildings and ideally three feet from pavement. Properly planted trees have a lower chance of buckling pavement by pushing up with roots. Right-of-way and tree planting area size requirements are listed in the Planting Area section of the Species List Categories page of this document.

Don't plant any tree in an area 4 feet by 4 feet or less. These small areas are commonly known as tree coffins. It is preferrable to have connected planting space instead of solitary islands of trees so that trees can share resources through their roots.



Large trees like the silver maple in the left figure will eventually interfere with utility wires and should not be planted near them.

Long-Term Sustainability

Prioritize characteristics

Choose plants based on their hardiness for environmental conditions, prevention of infrastructure conflicts, and long-term sustainability of the urban forest. It may be difficult to find the perfect tree that will fit a complete list of selected criteria, and understanding the purpose of the planting can narrow the list and avoid unforeseen complications. Green infrastructure is the only infrastructure that will increase in value over time if the "right tree" is put in the "right place."

More variety, less risk

A wide variety of species in our urban ecosystems is important. Not only do the variety of tree shapes and sizes create aesthetic appeal, but they also increase diversity and can help prevent species-specific insect or disease outbreaks. Municipalities with many different tree species are better adapted to climate change, see increased benefits than communities without variety, and are more resilient to tree pests and diseases.

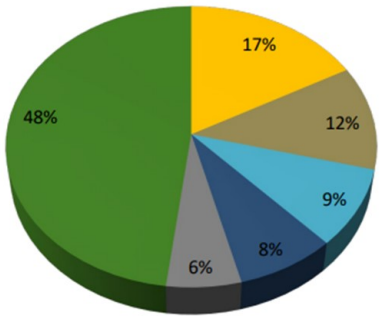
Species variety, or diversity, refers to the number of species present and the proportion of each species relative to others in a given area. Maintaining a predetermined proportion, such as specifying that no one genus of trees (i.e. oaks), should comprise more than 20% of the neighborhood tree population, is a good start. Municipalities should ideally have a mix of no more than 10% of a species, 20% of a genus, or 30% of a taxonomic family for tree species. In the community forestry world, we know this as the 10/20/30 rule and it helps us guide our decisions when selecting species.

Pest and disease awareness

Valuable lessons about pests and diseases in urban forests came in the wake of the introduction of Dutch elm disease in the 1930s and, more recently, the emerald ash borer in 2002. In both cases, elm and then ash trees were considered ideal street trees and were planted extensively without regard to species diversity. The monoculture of elm and later ash species allowed Dutch elm disease and the emerald ash borer to spread quickly, resulting in mass mortality. This left municipalities and landowners bearing the cost to remove and replace millions of trees. There are always new introductions of insects, types of fungus, and other vectors of tree mortality that are in play. Your awareness of them should influence species selection. Prioritize cultivars that display resistance to pests when possible.

Form for function

Tree growth form along with its mature height and spread help determine appropriate sites for species. Form refers to the growth pattern and shape of the trees branches. Some are ideal for roadways and rights-of-way such as columnar, vase, and upright oval forms since their branches are above vehicles, pedestrians, and traffic signage. If a species is ideal for a site in every characteristic except form, check if there is a cultivar with a different form that would be suitable. To an extent, form is also determined by spacing. More vertical growth occurs with trees spaced 20-30 feet from each other compared to 40-60+ feet apart because of light competition. Some species may change form with maturity.



The pie graph breaks down the results of an inventory of a Michigan community with 45.7% maples in its tree canopy.

This is much more than the 20% we would ideally want, so all future projects and plantings should proportionally favor other species over maple until an appropriate

Native, non-Native and Invasive Species

Trees native to Michigan are species indigenous to Michigan before European colonization. An example of a native tree in Michigan is the Red Oak (*Quercus rubra*). Native tree species provide the most ecosystem benefits to an area, but may not always be the most suitable for urban environments. They should be prioritized when urban conditions are appropriate.

Trees that are non-native to Michigan are tree species that are indigenous elsewhere and can survive in Michigan without causing harm. An example of a non-native tree species in Michigan is Gingko *(Gingko biloba)*, which is native to East Asia. Gingko trees are a good example of a non-native tree that is not considered invasive because of its slow growth rate and difficulty establishing from seed. Its inability to establish in native woodlands and its resilience in urban conditions make it a great tree for managed landscapes. The non-native species recommended in this guide currently have low or no known invasive potential.

Some trees can be non-native to Michigan but be native elsewhere within the United States. These species should be considered before looking at non-natives from outside of North America. An example of this would be Bald cypress (*Taxodium distichum*) which is native to the Southeast United States and is cold hardy enough to be a viable species in Michigan. However, species native to the United States can still have invasive characteristics, so consulting with experts is advised before introducing a new species.

Potentially invasive trees

Planting non-native, or exotic, trees in the landscape is an age-old tradition for the diversity and beauty these unique trees bring. Through the years, we have come to realize that some non-native trees have aggressive growth habits that result in them invading natural areas like wetlands and woodlands. Once established, these invasive exotic plant species can significantly disrupt habitats and ecosystem processes. Removing invasive species is costly, and eradication is rare after establishment and spread. The best practice is to be informed and prevent invasive species from establishing.
Some of these species were considered to have sterile seeds, but their sterility wanes over time and could infiltrate the natural landscape accidentally.
Several other tree species have weak wood, are vulnerable to pests or diseases or have the potential to become invasive, as evidenced by aggressive reproductive and/or growth habits near natural areas in other states with similar growing conditions.

Invasive trees

An invasive is a species whose introduction to an environment causes, or is likely to cause, economic or environmental harm. Under no circumstances should you plant invasive species in your landscape. Most invasive species are planted because they are said to grow quickly or look nice, because people planting them are unaware of invasive characteristics. Invasive species offer little to no ecological or economic benefits. These species spread quickly through seeds or root suckers and outcompete native vegetation.

The white flowering trees in the photo (Callery Pear) below have escaped their landscape planting in a business parking lot and have spread to a local agricultural field in Macomb County.

Tree Purchasing Considerations

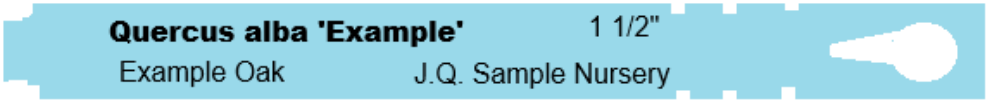
Understanding tree species names

Trees can be referred to by different names depending on who you talk to. You will usually see a tree listed as one of the three name types below:

Common name: What a species is commonly called. The same tree species can be known by different common names, usually varying by region, and could sometimes be replaced by their trade name. Our example from the tree tag below would be White Oak.

Botanical name: This is the scientific or Latin name for the species and is standard regardless of region. It consists of two parts, the first being the genus which is a noun and always capitalized. The genus is the larger taxonomic layer of a group of species. In the tree tag example below, the genus is *Quercus* which encompasses all oak trees. The second part is the species epithet and is usually an adjective and lowercase. Example from below would be *Quercus alba*. If it is a hybrid between species it is usually denoted by an 'x'. Trees in this list are arranged alphabetically by botanical name. When purchasing a tree, try to identify it by botanical name to ensure and confirm your desired species.

Cultivar name: The trade name of the species when it has been propagated for ornamental or specific use. These are trees that have specific traits unique from is general species and can be trademarked. It is referred to as the cultivar throughout this guide. The cultivar name is enclosed in single quotation marks after the botanical name, but can sometimes override the common name. We see in the example below that even though the tree is a White Oak, the cultivar 'Example' takes precedent and is labeled Example Oak. This is common for cultivars in a nursery setting.



Selecting tree stock to purchase

Purchase stock from a reputable state-licensed nursery. Resources for state-licensed nurseries and landscape professionals are in the resources section of this guide. Planting trees between 1.5 to 2.5 inches in trunk diameter is recommended, but trees can be smaller or larger based on project specifics. Keep these considerations in mind when choosing tree stock:

1. Select the appropriate stock for your planting needs:
    - **Bare root:** Small trees that are easy to transport and plant but require consistent moisture before planting. Tree mortality due to dry/dead roots can be a common issue.
    - **Container:** Usually smaller in diameter than balled and burlap trees. Requires more root preparation when planting by shaving off girdling or circling roots.
    - **Balled and burlap (B&B):** Usually larger and heavier trees; these are the most commonly planted in municipal projects. Root flare needs to be excavated to find proper planting height.
2. Inspect the roots and the root collar to be sure there is no girdling/circling roots.
3. Inspect the trunk for signs of damage or weakness in the bark.
4. Inspect the crown for an obvious central leader and/or strong branch attachments, or U-shaped unions with a visible branch collar at trunk attachment.

If the purchased trees are damaged or have poor root structure, you should reject them and return them for a replacement or refund.

Michigan Community Tree Species Selection Guide

Deciduous Species List Introduction

Overview

Deciduous trees are species that drop their leaves annually and are sometimes referred to as broadleaf trees.* They are commonly preferred by communities because of their wide variety and availability. Their dormant period in the winter allows sunlight to melt ice and snow along sidewalks and roads, while in the growing season the leaves shade those areas.

This list is divided up into three sections. The "At a Glance" section is sorted by alphabetical common name of species and includes the botanical name and MiCoTSS rating. The MiCoTSS rating is unique to this guide and takes into account weighted factors that express the suitability of species in Michigan's managed landscapes. The rating is on a scale from 1 to 10 with 1 being low suitability and 10 being high suitability. Start with the "At a Glance" section to identify species you would like to know more about and then continue on to the other two section lists that hold more information.

The second section list includes a deeper look into the technical characteristics of species including if they are native to the area, their climate adaptability, hardiness zones, form, relative mature size, and site tolerances. It is organized by alphabetical order of the botanical names. The last section is the narrative list that includes notable health issues, cultivars for community use, if they have any seeds or flowers of ornamental value, and other notes. It is organized by alphabetical order of the botanical names. Terms will be defined before viewing these lists for your convenience.

Limitations

This list was created by compiling species that may be available through Michigan nurseries as well as many reference materials about tree species that may or may not be readily available in Michigan. Not all of these species will be sold at your local nursery and you should tailor your plantings to what is available. You can always inquire about special-ordering species with your local supplier.

Specimen trees, or unique trees usually planted as a landscape highlight, were considered for this guide but mostly limited to observed species around Michigan. Just because a species is not listed here doesn't mean it should or should not be planted; consult your local tree supplier or experts. We tried to be inclusive and offer as many choices as possible, but some of these trees are rare and not as useful as other species selected.

Many cultivars that were left out of this guide that could provide advantageous value for trees in some community areas. Species such as Japanese maple have thousands of cultivars with varying availability from tree nursery to tree nursery, so the decision was made to limit this list to no more than three per species. Even if some trees listed here don't have a cultivar named in the listing, there could be one that would benefit you, so refer to your supplier and tree experts.

This list is a snapshot of information using the data and knowledge we currently have. As time progresses, we will learn more about tree species and their effectiveness in Michigan communities. New invasive species, pests, and disease are introduced every year. Urban and community forestry professionals should continue their educations and be aware of these threats and changes in this guide.

***Note:** Not all deciduous trees are broadleaf trees. Two of the species on the list, Baldcypress and Dawn Redwood, are deciduous conifers that drop their needles in the fall. Genus names are transitioning for two species. Cornus florida is now Benthamidia florida and Cornus alternifolia is now Swida alternifolia.

Michigan Community Tree Species Selection Guide

Deciduous Species at a Glance

Common Name	Botanical Name	MiCoTSS Rating
Alder, Smooth/Hazel	Alnus serrulata	5
Alder, Speckled	Alnus incana subsp. Rugosa	6
Amur Maackia	Maackia amurensis	5
Bald cypress	Taxodium distichum	10
Beech, American	Fagus grandifolia	3
Beech, European	Fagus sylvatica	2
Birch, Gray	Betula populifolia	2
Birch, Japanese White	Betula platyphylla	3
Birch, Paper	Betula papyrifera	6
Birch, River	Betula nigra	9
Birch, Yellow	Betula alleghaniensis	6
Black Gum/Tupelo	Nyssa sylvatica	10
Buckeye, Arnold	Aesculus x arnoldiana	6
Buckeye, Bottlebrush	Aesculus parviflora	3
Buckeye, Ohio	Aesculus glabra	5
Buckeye, Yellow	Aesculus flava	3
Butternut	Juglans cinerea	2
Catalpa, Northern	Catalpa speciosa	8
Catalpa, Southern	Catalpa bignonioides	8
Cherry, Black	Prunus serotina	3
Cherry, Japanese Flowering	Prunus serrulata	2
Cherry, Ornamental	Prunus spp.	2
Cherry, Sargent	Prunus sargentii	3
Chokecherry	Prunus virginiana	3
Crabapple	Malus spp.	3
Crabapple, Sargent	Malus sargentii	3
Dawn Redwood	Metasequoia glyptostroboides	7
Dogwood, Cornelian cherry	Cornus mas	4
Dogwood, Flowering	Cornus florida	6
Dogwood, Kousa	Cornus kousa	6
Dogwood, Pagoda/Alternate-Leaf	Cornus alternifolia	6
Elm, American	Ulmus americana	9
Elm, Hybrids	Ulmus x.	8
Franklin Tree	Franklinia alatamaha	5
Fringetree, Chinese	Chionanthus retusus	2
Fringetree, White	Chionanthus virginicus	8

Michigan Community Tree Species Selection Guide

Deciduous Species at a Glance

Common Name	Botanical Name	MiCoTSS Rating
Ginkgo	Ginkgo biloba	9
Hackberry, Common	Celtis occidentalis	10
Hackberry, Dwarf	Celtis tenuifolia	9
Hackberry, Southern	Celtis laevigata	9
Hardy Rubber Tree	Eucommia ulmoides	6
Hawthorn, Cockspur	Crataegus crusgalli	6
Hawthorn, Green	Crataegus viridis	6
Hawthorn, Washington	Crataegus phaenopyrum	5
Hickory, Bitternut/Swamp	Carya cardiformis	7
Hickory, Mockernut	Carya tomentosa	5
Hickory, Pignut	Carya glabra	5
Hickory, Shagbark	Carya ovata	4
Hickory, Shellbark	Carya laciniosa	5
Honeylocust, Thornless	Gleditsia triacanthos var. inermis	8
Hop-Hornbeam, American	Ostrya virginiana	10
Hornbeam, American	Carpinus caroliniana	10
Hornbeam, European	Carpinus betulus	6
Horsechestnut, Common	Aesculus hippocastanum	3
Horsechestnut, Red	Aesculus x carnea	5
Hydrangea, Panicle	Hydrangea paniculata	4
Kentucky Coffeetree	Gymnocladus dioicus	10
Laburnum, Common	Laburnum anagyroides	2
Linden, American	Tilia americana	6
Linden, Hybrids	Tilia x.	6
Linden, Littleleaf	Tilia cordata	6
Linden, Silver	Tilia tomentosa	6
London Planetree	Platanus x acerifolia	7
Magnolia, Cucumbertree	Magnolia acuminata	5
Magnolia, Loebner	Magnolia x loebneri	4
Magnolia, Saucer	Magnolia x soulangiana	4
Magnolia, Star	Magnolia stellata	4
Magnolia, Sweetbay	Magnolia virginiana	5

Michigan Community Tree Species Selection Guide

Deciduous Species at a Glance

Common Name	Botanical Name	MiCoTSS Rating
Maple, Black	Acer nigrum	3
Maple, Freeman	Acer x freemanii	3
Maple, Japanese	Acer palmatum	1
Maple, Miyabe	Acer miyabei	3
Maple, Paperbark	Acer griseum	3
Maple, Red	Acer rubrum	3
Maple, Silver	Acer saccharinum	1
Maple, Striped	Acer pensylvanicum	3
Maple, Sugar	Acer saccharum	3
Oak, Black	Quercus velutina	5
Oak, Bur	Quercus macrocarpa	10
Oak, Chestnut	Quercus montana	7
Oak, Chinkapin	Quercus muehlenbergii	8
Oak, English	Quercus robur	5
Oak, Hybrids	Quercus x.	5
Oak, Northern Pin	Quercus ellipsoidalis	4
Oak, Northern Red	Quercus rubra	6
Oak, Overcup	Quercus lyrata	7
Oak, Pin	Quercus palustris	6
Oak, Scarlet	Quercus coccinea	6
Oak, Shingle	Quercus imbricaria	7
Oak, Shumard/Swamp Red	Quercus shumardii	5
Oak, Swamp Chestnut	Quercus michauxii	7
Oak, Swamp White	Quercus bicolor	10
Oak, White	Quercus alba	6
Oak, Willow	Quercus phellos	5
Osage Orange	Maclura pomifera	5
Parrotia, Persian	Parrotia persica	6
Pawpaw	Asimina triloba	4
Pecan, Hardy	Carya illinoinensis	4
Persimmon, Common	Diospyros virginiana	9
Plum, American	Prunus americana	2
Plum, Canadian	Prunus nigra	2
Pond cypress	Taxodium distichum var. imbricarium	10
Poplars/Aspen/Cottonwood	Populus spp.	1
Redbud, Eastern	Celtis canadensis	8
Sassafras	Sassafras albidum	5

Michigan Community Tree Species Selection Guide

Deciduous Species at a Glance

Common Name	Botanical Name	MiCoTSS Rating
Serviceberry, Allegheny	Amelanchier laevis	8
Serviceberry, Apple	Amelanchier x grandiflora	7
Serviceberry, Downy	Amelanchier arborea	8
Serviceberry, Saskatoon	Amelanchier alnifolia	7
Serviceberry, Shadblow/Canada	Amelanchier canadensis	8
Silverbell, Carolina/Common	Halesia carolina	7
Smoketree, American	Cotinus obovatus	9
Snowbell, Fragrant	Styrax obassia	3
Snowbell, Japanese	Styrax japonicus	3
Sourwood	Oxydendrum arboreum	5
Stewartia, Korean/Japanese	Stewartia pseudocamellia	2
Sweetgum	Liquidambar styraciflua	6
Sycamore	Platanus occidentalis	7
Tuliptree	Liriodendron tulipifera	6
Turkish Filbert	Corylus colurna	5
Wafer-Ash	Ptelea trifoliata	7
Walnut, Black	Juglans nigra	2
Willow, Black	Salix nigra	2
Witch hazel, Common	Hamamelis virginiana	6
Witch hazel, Vernal	Hamamelis vernalis	5
Yellowwood	Cladrastis kentuckea	7
Zelkova, Japanese	Zelkova serrata	6

Michigan Community Tree Species Selection Guide

Deciduous Species List Definitions

MiCoTSS rating
A rating unique to this guide that takes into account weighted factors that express the suitability of species in Michigan's managed landscapes. The rating is on a scale from 1 to 10 with 1 being low suitability and 10 being high suitability. **Use this to inform your decision, not to make the decision for you.**

Native (Michigan) and Native (United States)
Denotes if a species was present within the State of Michigan and/or United States prior to European colonialization.

Climate adaptability
A five-tier scale from Very Low to Very High rating how well a species is predicted to adapt to climate change and/or expand its planting range. Disclaimer: The data used for this category is tailored to the metropolitan Detroit area and becomes unreliable when applied elsewhere.

Hardiness zones
The general hardiness zone range that the species will tolerate. It could be different based on the cultivar and source location of the trees.

Mature height and spread (in feet)
The average height and spread of the tree canopy at maturity.

Form
The general shape or structure of the species. Categorized into: Upright Oval, Round, Spreading, Pyramidal, Columnar, Vase, and Various.

Planting area
Planting space has been generalized into small, medium, and large categories that include minimum standards for planting widths for rights-of-way, square footage minimums, and relative tree size classes for those area sizes. Please refer to the table below for more information.

Planting Area	Minimum Planting Width (Feet)	Min. Total Area (Square Feet)	Mature Tree Size (Height in Feet)
Small (S)	5	50-100	<30
Medium (M)	6	100-200	30-50
Large (L)	7	>200	>50

Site tolerances
Common stressors that species may or may not tolerate. These might change depending on cultivar.

Denoted as Intolerant (I), Neutral (N), and Tolerant (T) within the species list.
- **Drought**: Tolerance of a prolonged absence of available moisture for the tree
- **Poor drainage**: Tolerance of site soil that lacks pore space, causing slow infiltration of water
- **Alkaline soil**: Tolerance of soil that has a pH higher than 7
- **Salt**: Tolerance of salt, usually from road de-icing
- **Air pollution**: Tolerance of poor air quality and emissions of pollutants, usually from vehicles
- **Shade**: Tolerance of shade from surroundings

Michigan Community Tree Species Selection Guide

Name	MiCoTSS Rating	Native (MI)	Native (US)	Climate Adaptability	Hardiness Zones	Form	Mature Height (Ft.)	Mature Spread	Planting Area	Drought	Poor Drainage	Alkaline Soil	Salt	Air Pollution	Shade
Acer griseum Paperbark Maple	3	No	No	Very Low	5-9	Upright Oval	25	25	S	N	I	N	N	N	T
Acer miyabei Miyabe Maple	3	No	No	High	4-8	Upright Oval	40	40	M	N	N	T	N	N	T
Acer nigrum Black Maple	3	Yes	Yes	Moderate	4-8	Upright Oval	75	50	L	I	T	N	I	T	T
Acer palmatum Japanese Maple	1	No	No	Moderate	5-8	Various	20	15	S	I	I	N	I	N	T
Acer pensylvanicum Striped Maple	3	Yes	Yes	Moderate	3-7	Vase	25	20	S	I	T	I	I	N	T
Acer rubrum Red Maple	3	Yes	Yes	Moderate	3-9	Upright Oval	70	50	L	I	T	I	I	T	T
Acer saccharinum Silver Maple	1	Yes	Yes	Low	3-9	Spreading	80	60	L	I	T	I	I	N	T
Acer saccharum Sugar Maple	3	Yes	Yes	Moderate	4-8	Upright Oval	75	50	L	I	T	N	I	T	T
Acer x freemanii Freeman Maple	3	No	No	Moderate	3-7	Upright Oval	70	45	M	N	T	I	N	T	T
Aesculus flava Yellow Buckeye	3	No	Yes	Moderate	4-8	Upright Oval	70	35	L	N	N	N	N	N	N
Aesculus glabra Ohio Buckeye	5	Yes	Yes	Moderate	4-8	Round	45	40	L	N	T	I	T	I	N
Aesculus hippocastanum Common Horsechestnut	3	No	Yes	Moderate	3-8	Upright Oval	75	65	L	N	N	N	N	T	I
Aesculus parviflora Bottlebrush Buckeye	3	No	Yes	Moderate	4-8	Round	12	15	S	I	N	N	N	T	T
Aesculus x arnoldiana Arnold Buckeye	6	No	No	Moderate	4-8	Round	25	25	M	I	N	T	T	T	T
Aesculus x carnea Red Horsechestnut	5	No	No	Moderate	5-8	Pyramidal	40	40	M	N	N	N	N	T	N
Alnus incana subsp. Rugosa Speckled Alder	6	Yes	Yes	Moderate	2-6	Vase	25	25	S	I	T	N	N	N	T
Alnus serrulata Smooth Alder/ Hazel Alder	5	No	Yes	Unknown	4-9	Round	20	15	S	I	T	T	N	N	I

Michigan Community Tree Species Selection Guide

Name	MiCoTSS Rating	Native (MI)	Native (US)	Climate Adaptability	Hardiness Zones	Form	Mature Height (Ft.)	Mature Spread (Ft.)	Planting Area	Drought	Poor Drainage	Alkaline Soil	Salt	Air Pollution	Shade
Amelanchier alnifolia Saskatoon Serviceberry	7	No	Yes	High	4-5	Round	8	8	S	N	T	N	T	I	N
Amelanchier arborea Downy Serviceberry/ Juneberry	8	Yes	Yes	Very High	4-9	Round	25	25	S	N	N	N	N	I	N
Amelanchier canadensis Shadblow Serviceberry/ Canada Serviceberry	8	Yes	Yes	High	3-7	Round	25	25	S	N	T	N	N	I	N
Amelanchier laevis Allegheny Serviceberry	8	No	Yes	Very High	4-8	Round	25	25	S	N	N	T	N	I	N
Amelanchier x grandiflora Apple Serviceberry	7	No	No	Moderate	4-9	Round	25	25	S	T	N	T	N	I	T
Asimina triloba Pawpaw/ Custard Apple	4	Yes	Yes	Moderate	5-9	Pyramidal	30	30	M	N	N	I	N	N	N
Betula alleghaniensis Yellow Birch	6	Yes	Yes	High	3-7	Round	65	60	M	I	T	N	N	N	N
Betula nigra River Birch	9	Yes	Yes	High	4-9	Upright Oval	40	30	S	N	T	I	N	T	N
Betula papyrifera Paper Birch	6	Yes	Yes	Moderate	2-7	Upright Oval	55	35	M	I	N	N	N	N	N
Betula platyphylla Japanese White Birch	3	No	No	Unknown	3-7	Pyramidal	40	25	S	I	N	N	N	N	N
Betula populifolia Gray Birch	2	No	Yes	Very Low	3-7	Pyramidal	40	20	M	I	T	N	N	N	I
Carpinus betulus European Hornbeam	6	No	No	Moderate	4-8	Various	40	30	S	N	N	T	I	T	N
Carpinus caroliniana American Hornbeam/ Musclewood/ Blue Beech	10	Yes	Yes	Very High	3-9	Various	30	30	S	N	N	N	I	T	T

Michigan Community Tree Species Selection Guide

Name	MiCoTSS Rating	Native (MI)	Native (US)	Climate Adaptability	Hardiness Zones	Form	Mature Height (Ft.)	Mature Spread (Ft.)	Planting Area	Drought	Poor Drainage	Alkaline Soil	Salt	Air Pollution	Shade
Carya cardiformis Bitternut Hickory/ Swamp Hickory	7	Yes	Yes	High	4-9	Upright Oval	70	45	L	N	N	N	I	T	T
Carya glabra Pignut Hickory	5	Yes	Yes	Moderate	4-9	Upright Oval	65	40	L	T	N	N	I	T	T
Carya illinoinensis Hardy Pecan	4	No	Yes	Unknown	5-9	Upright Oval	75	40	L	T	I	T	N	N	N
Carya laciniosa Shellbark Hickory	5	Yes	Yes	Moderate	4-9	Upright Oval	75	55	L	I	N	I	I	T	T
Carya ovata Shagbark Hickory	4	Yes	Yes	Very Low	4-9	Upright Oval	70	45	L	T	N	N	I	T	T
Carya tomentosa Mockernut Hickory	5	No	Yes	High	4-9	Upright Oval	50	25	L	T	I	N	I	T	N
Catalpa bignonioides Southern Catalpa	8	No	Yes	Moderate	5-9	Round	50	45	L	T	T	T	N	T	N
Catalpa speciosa Northern Catalpa	8	No	Yes	Moderate	4-8	Upright Oval	60	40	L	T	T	T	N	T	N
Celtis laevigata Sugarberry/ Sugar Hackberry/ Southern Hackberry	9	No	Yes	High	6-9	Round	50	45	M	T	N	T	T	T	T
Celtis occidentalis Common Hackberry	10	Yes	Yes	Very High	3-9	Round	50	45	M	T	N	T	T	T	T
Celtis tenuifolia Dwarf Hackberry	9	No	Yes	High	5-9	Upright Oval	30	20	S	T	N	T	T	T	I
Cercidiphyllum japonicum Katsura Tree	4	No	No	Low	4-8	Pyramid	50	35	M	I	N	T	N	N	T
Cercis canadensis Eastern Redbud	8	Yes	Yes	High	4-9	Spreading	30	35	S	N	N	T	N	I	T
Chionanthus retusus Chinese Fringetree	2	No	No	Unknown	5-9	Spreading	20	20	S	I	N	N	N	N	N
Chionanthus virginicus White Fringetree	8	No	Yes	Very High	3-9	Spreading	20	20	S	N	N	T	N	N	N

Michigan Community Tree Species Selection Guide

Name	MiCoTSS Rating	Native (MI)	Native (US)	Climate Adaptability	Hardiness Zones	Form	Mature Height (Ft.)	Mature Spread (Ft.)	Planting Area	Drought	Poor Drainage	Alkaline Soil	Salt	Air Pollution	Shade
Cladrastis kentuckea Yellowwood	7	No	Yes	High	4-8	Round	45	45	M	N	I	T	N	T	I
Cornus alternifolia Pagoda Dogwood/ Alternate-Leaf Dogwood	6	Yes	Yes	Moderate	3-7	Round	20	20	S	I	N	N	N	N	T
Cornus florida Flowering Dogwood	6	Yes	Yes	High	5-9	Round	30	30	S	I	I	N	N	N	T
Cornus kousa Kousa Dogwood	6	No	No	High	5-8	Round	30	30	S	N	I	T	N	T	N
Cornus mas Corneliancherry Dogwood	4	No	No	Moderate	5-8	Round	20	20	S	N	N	T	N	N	N
Corylus colurna Turkish Filbert/ Turkish Hazelnut	5	No	No	Moderate	5-7	Pyramidal	50	35	L	T	N	T	I	T	N
Cotinus obovatus American Smoketree/ Chittamwood	9	No	Yes	Very High	5-8	Upright Oval	30	25	S	N	N	T	N	T	N
Crataegus crusgalli Cockspur Hawthorn	6	No	Yes	Moderate	4-7	Round	30	30	S	T	N	T	N	T	I
Crataegus phaenopyrum Washington Hawthorn	5	No	Yes	Moderate	4-8	Round	30	25	S	T	N	T	I	T	I
Crataegus viridis Green Hawthorn	6	No	Yes	Moderate	4-7	Spreading	30	30	S	T	N	T	N	T	I
Diospyros virginiana Common Persimmon	9	No	Yes	Very High	4-9	Upright Oval	50	35	M	T	N	T	T	N	N
Eucommia ulmoides Hardy Rubber Tree	6	No	No	High	4-7	Upright Oval	60	50	L	T	I	T	T	T	N
Fagus grandifolia American Beech	3	Yes	Yes	High	3-8	Round	75	75	L	N	I	N	I	T	N
Fagus sylvatica European Beech	2	No	No	Moderate	4-7	Round	75	60	L	N	I	N	I	T	N

Michigan Community Tree Species Selection Guide

Name	MiCoTSS Rating	Native (MI)	Native (US)	Climate Adaptability	Hardiness Zones	Form	Mature Height (Ft.)	Mature Spread (Ft.)	Planting Area	Drought	Poor Drainage	Alkaline Soil	Salt	Air Pollution	Shade
Franklinia alatamaha Franklin Tree	5	No	Yes	Unknown	5-8	Round	20	15	S	I	T	T	N	N	N
Fagus sylvatica European Beech	2	No	No	Moderate	4-7	Round	75	60	L	N	I	N	I	T	N
Franklinia alatamaha Franklin Tree	5	No	Yes	Unknown	5-8	Round	20	15	S	I	T	T	N	N	N
Ginkgo biloba Ginkgo/ Maidenhair Tree	9	No	No	Very High	3-8	Columnar	50	40	M	T	N	T	N	T	N
Gleditsia triacanthos var. inermis Thornless Honeylocust	8	Yes	Yes	High	3-8	Vase	50	40	M	T	N	T	T	I	N
Gymnocladus dioicus Kentucky Coffeetree	10	Yes	Yes	Very High	3-8	Upright Oval	70	50	M	T	T	T	T	T	N
Halesia carolina Carolina Silverbell/ Common Silverbell	7	No	Yes	Moderate	5-8	Vase	30	30	M	I	N	I	N	N	T
Hamamelis vernalis Vernal Witchhazel	5	No	Yes	Moderate	4-8	Vase	10	10	S	I	N	T	N	N	N
Hamamelis virginiana Common Witchhazel	6	Yes	Yes	Round	3-8	Vase	25	25	S	N	T	N	N	N	T
Hydrangea paniculata Panicle Hydrangea	4	No	Yes	Unknown	4-8	Round	20	20	S	N	N	T	I	N	T
Juglans cinerea Butternut/ White Walnut	2	Yes	Yes	Low	3-7	Round	60	45	L	I	I	T	I	T	I
Juglans nigra Black Walnut	2	Yes	Yes	Low	4-9	Round	75	70	L	I	I	T	I	T	I
Laburnum anagyroides Common Laburnum/ Golden Chain Tree	2	No	No	Unknown	5-7	Vase	25	25	S	I	I	N	N	N	T
Liquidambar styraciflua Sweetgum	6	No	Yes	Low	5-9	Round	55	45	M	N	T	N	N	I	N

Michigan Community Tree Species Selection Guide

Name	MiCoTSS Rating	Native (MI)	Native (US)	Climate Adaptability	Hardiness Zones	Form	Mature Height (Ft.)	Mature Spread (Ft.)	Planting Area	Drought	Poor Drainage	Alkaline Soil	Salt	Air Pollution	Shade
Liriodendron tulipifera Tuliptree/ Tulip Poplar/ Yellow Poplar	6	Yes	Yes	Low	5-9	Upright Oval	80	40	L	N	N	N	I	I	I
Maackia amurensis Amur Maackia	5	No	No	High	3-7	Vase	30	35	S	N	N	T	N	T	I
Maclura pomifera Osage Orange	5	No	Yes	High	5-9	Round	45	40	M	T	N	T	T	T	I
Magnolia acuminata Cucumbertree Magnolia	5	No	Yes	High	4-8	Round	80	60	L	I	N	N	I	I	N
Magnolia stellata Star Magnolia	4	No	No	High	5-8	Pyramid	20	15	M	I	N	N	I	T	I
Magnolia virginiana Sweetbay Magnolia	5	No	Yes	Very High	5-10	Columnar	50	25	L	I	N	N	I	N	I
Magnolia x loebneri Loebner Magnolia	4	No	No	High	5-8	Upright Oval	25	25	M	I	N	T	I	I	N
Magnolia x soulangiana Saucer Magnolia	4	No	No	Very High	5-9	Round	30	30	M	I	N	N	I	N	I
Malus sargentii Sargent Crabapple	3	No	No	Moderate	4-7	Round	20	15	S	T	N	T	I	I	I
Malus spp. Crabapple	3	No	No	Moderate	4-7	Round	20	25	S	T	I	N	T	I	N
Metasequoia glyptostroboides Dawn Redwood	7	No	No	High	5-8	Pyramid	80	35	L	N	T	N	I	T	I

Name	MiCoTSS Rating	Native (MI)	Native (US)	Climate Adaptability	Hardiness Zones	Form	Mature Height (Ft.)	Mature Spread (Ft.)	Planting Area	Drought	Poor Drainage	Alkaline Soil	Salt	Air Pollution	Shade
Nyssa sylvatica Black Gum/ Black Tupelo	10	Yes	Yes	Very High	4-9	Upright Oval	50	25	M	T	T	I	N	T	T
Ostrya virginiana American Hop-Hornbeam/ Ironwood	10	Yes	Yes	Very High	3-8	Upright Oval	40	35	S	N	N	T	I	T	N
Oxydendrum arboreum Sourwood/ Lily-of-the-Valley Tree	5	No	Yes	High	5-8	Pyramidal	40	25	M	I	N	N	I	I	T
Parrotia persica Persian Parrotia/ Persian Ironwood	6	No	No	High	5-8	Upright Oval	40	30	M	T	I	N	N	N	N
Platanus occidentalis Sycamore	7	Yes	Yes	High	4-9	Round	90	70	L	T	T	T	N	I	I
Platanus x acerifolia London Planetree	7	No	No	High	5-9	Round	80	70	L	T	T	T	N	I	I
Populus spp. Aspen/ Poplar/ Cottonwood	1	Yes	Yes	Low	2-7	Various	60	30	L	I	N	N	I	I	I
Prunus americana American Plum	2	Yes	Yes	Low	3-8	Round	25	20	S	N	N	N	I	I	N
Prunus nigra Canadian Plum	2	Yes	Yes	Low	2-5	Round	25	20	S	N	N	N	I	I	N
Prunus sargentii Sargent Cherry	3	No	No	Moderate	5-8	Round	40	40	M	N	I	N	N	I	I
Prunus serotina Black Cherry	3	Yes	Yes	Low	3-9	Upright Oval	80	50	L	N	N	N	I	N	N
Prunus serrulata Japanese Flowering Cherry	2	No	No	Moderate	5-6	Round	20	20	S	I	I	N	I	N	N
Prunus spp. Ornamental Cherry	2	No	No	Moderate	5-9	Round	35	35	M	N	I	N	I	I	N
Prunus virginiana Chokecherry	3	Yes	Yes	Moderate	3-6	Round	25	15	S	N	I	T	I	I	N

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Name	MiCoTSS Rating	Native (MI)	Native (US)	Climate Adaptability	Hardiness Zones	Form	Mature Height (Ft.)	Mature Spread (Ft.)	Planting Area	Drought	Poor Drainage	Alkaline Soil	Salt	Air Pollution	Shade
Ptelea trifoliata Wafer-Ash/ Common Hop Tree	7	Yes	Yes	High	4-9	Round	25	15	S	T	N	T	T	N	T
Quercus alba White Oak	6	Yes	Yes	Moderate	3-9	Round	100	80	L	N	T	N	N	N	N
Quercus bicolor Swamp White Oak	10	Yes	Yes	Very High	4-8	Upright Oval	70	60	L	T	T	T	N	N	I
Quercus coccinea Scarlet Oak	6	Yes	Yes	High	5-8	Round	70	55	L	N	T	N	I	I	I
Quercus ellipsoidalis Northern Pin Oak	4	Yes	Yes	Low	4-8	Upright Oval	75	45	L	N	T	I	I	I	I
Quercus imbricaria Shingle Oak	7	No	Yes	High	5-8	Upright Oval	60	60	L	N	N	N	T	N	N
Quercus lyrata Overcup Oak	7	No	Yes	High	5-9	Round	60	60	L	T	N	N	N	N	I
Quercus macrocarpa Bur Oak	10	Yes	Yes	Very High	3-8	Upright Oval	90	80	L	T	T	T	N	N	I
Quercus michauxii Swamp Chestnut Oak	7	No	Yes	High	5-9	Round	80	60	L	T	T	T	N	N	I
Quercus montana Chestnut Oak	7	No	Yes	High	4-8	Round	70	70	L	T	N	T	N	N	I
Quercus muehlenbergii Chinkapin Oak	8	Yes	Yes	High	3-9	Round	60	60	L	T	N	T	N	N	I
Quercus palustris Pin Oak	6	Yes	Yes	High	4-8	Upright Oval	75	40	L	N	N	I	I	I	I
Quercus phellos Willow Oak	5	No	Yes	Unknown	5-9	Upright Oval	75	50	L	N	T	T	N	T	I
Quercus robur English Oak	5	No	No	Moderate	5-8	Upright Oval	60	50	L	T	N	T	N	T	I
Quercus rubra Northern Red Oak	6	Yes	Yes	High	3-9	Upright Oval	80	60	L	T	I	N	T	T	I
Quercus shumardii Shumard Oak/ Swamp Red Oak	5	No	Yes	High	5-9	Round	80	50	L	T	N	N	N	N	I

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Name	MiCoTSS Rating	Native (MI)	Native (US)	Climate Adaptability	Hardiness Zones	Form	Mature Height (Ft.)	Mature Spread (Ft.)	Planting Area	Drought	Poor Drainage	Alkaline Soil	Salt	Air Pollution	Shade
Quercus velutina Black Oak	5	Yes	Yes	Low	3-9	Upright Oval	70	50	L	N	N	N	N	N	I
Quercus x. Hybrid Oaks	5	No	No	Unknown	4-8	Columnar	30	20	M	T	T	T	N	T	I
Salix nigra Black Willow	2	Yes	Yes	Low	4-9	Vase	60	60	L	I	T	N	N	I	I
Sassafras albidum Sassafras	5	Yes	Yes	Moderate	4-8	Columnar	50	30	L	N	N	N	I	N	N
Stewartia pseudocamellia Korean Stewartia/ Japanese Stewartia	2	No	No	Unknown	5-8	Pyramidal	40	30	M	I	N	N	N	N	N
Styrax japonicus Japanese Snowbell	3	No	No	Unknown	5-9	Vase	30	30	M	I	N	N	N	N	N
Styrax obassia Fragrant Snowbell	3	No	No	Unknown	5-8	Vase	30	25	S	I	N	N	N	N	N
Taxodium distichum Baldcypress	10	No	Yes	Very High	5-10	Pyramidal	70	30	L	T	T	N	N	T	T
Taxodium distichum var. imbricarium Pondcypress	10	No	Yes	Very High	5-9	Pyramidal	60	20	L	T	T	N	N	T	T
Tilia americana American Linden/ Basswood	6	Yes	Yes	Moderate	5-8	Round	80	50	L	N	N	T	I	I	T
Tilia cordata Littleleaf Linden	6	No	No	High	4-7	Round	60	40	L	N	N	T	I	T	N
Tilia tomentosa Silver Linden	6	No	No	High	4-8	Pyramidal	70	55	L	N	N	T	N	T	N
Tilia x. Hybrid Lindens	6	No	No	Unknown	4-8	Pyramidal	70	40	L	N	N	T	I	T	N
Ulmus americana American Elm	9	Yes	Yes	High	3-9	Vase	100	80	L	T	T	T	N	T	N
Ulmus x. Hybrid Elms	8	No	No	Unknown	4-7	Vase	70	60	L	T	T	T	N	T	N
Zelkova serrata Japanese Zelkova	6	No	No	Very High	5-9	Vase	40	30	M	T	N	N	N	I	I

Deciduous Species Narrative List Categories

Notable cultivars

A category that lists up to three cultivars per species that display some advantageous form, resistance, or tolerance for urban environments. Consult with your local nursery or supplier about what cultivars are available and their benefits. There might be a cultivar available even if there is "None" in the category for a species. New varieties of species are being developed, tested, and sold that might be more advantageous in tolerances, resistances, or form for your community.

Health concerns

The health concerns listed within this guide are those that commonly occur in Michigan or present a significant threat to the tree. Even if labeled "None Notable," there may be a pest or disease that can affect the tree, if present. You can always test your tree by sending samples to the Michigan State University Plant Diagnostics Laboratory; the address is on the resources page of this guide. Most of what is listed are health concerns that have high mortality rates for trees, are an economic burden to communities, and/or are chronically present in Michigan.

Site Usage

This category refers to different types of sites that a species might be better suited for. It has been divided into the four site types below:

- **Street tree:** Sites near roadways, rights-of-way, medians, tree lawns, and parking lots. Usually areas that are prone to salt and air pollution.
- **Riparian/wet**: Sites near streams, rivers, drainage canals, areas with high flooding, rain gardens, or any body of water.
- **Park/open lawn:** Sites with ample space and usually ample sunlight such as fields, lawns, yards, and park space.
- **Overhead utility friendly**: Sites near overhead utilities such as electrical wires. Species denoted as friendly are based off of DTE Energy and Consumers Energy standards for tree planting and maintenance around power lines.

Flower/fruit/seed interest

Presence of different flowers, fruit, and seed that are noticeable on the species. These could be a positive or negative feature of the tree if you view such as aesthetically pleasing or utilitarian. Cultivars may exist for a species that come in different flower colors or without seeds if that is something you prioritize. It should be noted for street tree plantings near drainage areas to look up if the fruit, seeds, or seed pods might be an issue for clogging drains.

Other notes

Important or relevant information about the species that would otherwise not fit into a category on the list. These are supplemental notes provided by the author of this guide.

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Name	Notable Cultivars	Health Concerns	Site Usage	Flower/ Fruit/ Seed	Other Notes
Acer griseum Paperbark Maple	‘Copper Rocket'- Narrow growth form 'Cinnamon Flake'- Improved cold and drought tolerance	None Notable	Street Tree, Park/ Open Lawn, Overhead Utility Friendly	Samara	MiCoTSS rating is lower due to high representation of maples in Michigan canopies
Acer miyabei Miyabe Maple	‘State Street'- Higher tolerance of heat, drought, alkaline soils	None Notable	Street Tree, Park/ Open Lawn	Samara	MiCoTSS rating is lower due to high representation of maples in Michigan canopies
Acer nigrum Black Maple	‘Greencolumn'- Higher heat resistance	None Notable	Riparian/Wet, Park/Open Lawn	Samara	MiCoTSS rating is lower due to high representation of maples in Michigan canopies
Acer palmatum Japanese Maple	Various, more cultivars than any other tree species	None Notable	Park/Open Lawn, Overhead Utility Friendly	Samara	MiCoTSS rating is lower due to high representation of maples in Michigan canopies
Acer pensylvanicum Striped Maple	None Notable	None Notable	Street Tree, Riparian/Wet, Overhead Utility Friendly	Samara	MiCoTSS rating is lower due to high representation of maples in Michigan canopies
Acer rubrum Red Maple	‘Autumn Spire'- Columnar growth form with higher tolerance to urban conditions 'Redpointe'- Higher tolerance of alkaline soils, resistant to fungal diseases/chlorosis 'Red Sunset'- Higher heat tolerance	None Notable	Street Tree, Riparian/Wet, Park/Open Lawn	Samara	MiCoTSS rating is lower due to high representation of maples in Michigan canopies
Acer saccharinum Silver Maple	None Notable	None Notable	Riparian/Wet, Park/Open Lawn	Samara	Used to be planted in communities due to high growth rate. No longer planted due to weak wood and shallow root system. Plant only near bodies of water and in open park areas. MiCoTSS Rating is lower due to high representation of maples in Michigan canopies.

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Name	Notable Cultivars	Health Concerns	Site Usage	Flower/ Fruit/ Seed	Other Notes
Acer saccharum Sugar Maple	'Apollo'- Columnar growth form with higher heat resistance 'Powder Keg'- Better tolerance to heat, drought, and tough growing conditions 'Unity'- Better tolerance for cold climates; resists frost cracking in bark	None Notable	Street Tree, Riparian/Wet, Park/Open Lawn	Samara	MiCoTSS rating is lower due to high representation of maples in Michigan canopies
Acer x. freemanii Freeman Maple	Various	Frost Damage	Street Tree, Riparian/Wet, Park/Open Lawn	Samara	Hybrid between red and silver maples. Shallow root system. Thin bark makes tree susceptible to frost and mechanical damage. Is picky with soil pH. Chance of grafting compatibility failure.
Aesculus flava Yellow Buckeye	'Apollo'- Columnar growth form with higher heat resistance 'Powder Keg'- Higher tolerance to heat, drought, and tough growing conditions 'Unity'- Higher cold tolerance, resists frost cracking in bark	Guignardia Leaf Blotch, Anthracnose	Park/Open Lawn	Flowers, Seed Pod, Nut	Seeds harmful if ingested.
Aesculus glabra Ohio Buckeye	'JN Select'- Scorch resistant foliage, less fruit production	Guignardia Leaf Blotch, Anthracnose	Park/Open Lawn	Flowers, Seed Pod, Nut	None
Aesculus hippocastanum Common Horsechestnut	None	Guignardia Leaf Blotch, Anthracnose	Park/Open Lawn	Flowers, Seed Pod Nut	None

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Name	Notable Cultivars	Health Concerns	Site Usage	Flower/ Fruit/ Seed	Other Notes
Aesculus parviflora Bottlebrush Buckeye	None	Guignardia Leaf Blotch, Anthracnose	Park/Open Lawn, Overhead Utility Friendly	Flowers, Seed Pod, Nut	None
Aesculus x arnoldiana Arnold Buckeye	'Autumn Splendor'- Resistant to leaf blotch	Guignardia Leaf Blotch, Anthracnose	Park/Open Lawn, Overhead Utility Friendly	Flowers, Seed Pod, Nut	None
Aesculus x carnea Red Horsechestnut	'Briotii'- Slight scorch resistance, compact growth habit 'Ft. McNair'- Columnar growth habit	Guignardia Leaf Blotch, Anthracnose	Park/Open Lawn	Flowers, Seed Pod, Nut	None
Alnus incana subsp. Rugosa Speckled Alder	None	None Notable	Riparian/Wet, Overhead Utility Friendly	Catkins	Ideal for drainage sites.
Alnus serrulata Smooth Alder/ Hazel Alder	None	None Notable	Riparian/Wet, Overhead Utility Friendly	Catkins	Ideal for drainage sites.
Amelanchier alnifolia Saskatoon Serviceberry	None	Japanese Beetle	Riparian/Wet, Park/ Open Lawn, Overhead Utility Friendly	Flowers, Berry, Fruit	More of a shrub than tree. High yielding berry producer of Amelanchier species.
Amelanchier arborea Downy Serviceberry/ Juneberry	'Autumn Sunset'- Higher heat and drought tolerance	Japanese Beetle	Street Tree, Park/ Open Lawn, Overhead Utility Friendly	Flowers, Berry, Fruit	None
Amelanchier canadensis Shadblow Serviceberry/ Canada Serviceberry	'Glenform'- Upright growth habit	Japanese Beetle	Street Tree, Riparian/Wet, Park/ Open Lawn, Overhead Utility Friendly	Flowers, Berry, Fruit	None

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Name	Notable Cultivars	Health Concerns	Site Usage	Flower/Fruit/ Seed	Other Notes
Amelanchier laevis Allegheny Serviceberry	‘Snowcloud'- Better form and tolerance to urban conditions	Japanese Beetle	Street Tree, Park/ Open Lawn, Overhead Utility	Flowers, Berry, Fruit	None
Amelanchier x grandiflora Apple Serviceberry	'Robin Hill'- Higher tolerance to urban conditions, produces	Japanese Beetle	Street Tree, Park/ Open Lawn, Overhead Utility	Flowers, Berry, Fruit	Heavy berry producer.
Asimina triloba Pawpaw/ Custard Apple	'Davis'- Keeps fruit well in the cold	None Notable	Riparian/Wet, Park/ Open Lawn	Fruit	Coveted for its edible fruit. Spreads clonally through root
Betula alleghaniensis Yellow Birch	None	Bronze Birch Borer	Riparian/Wet, Park/ Open Lawn	Catkins	None
Betula nigra River Birch	'Little King'- Dwarf variety for compact spaces 'Dura Heat'- Higher heat tolerance 'Heritage'- Higher heat tolerance	Bronze Birch Borer	Street Tree, Riparian/Wet	Catkins	None
Betula papyrifera Paper Birch	'Renci'- Resists Bronze Birch Borer damage 'Varen'- Higher tolerance to urban conditions	Bronze Birch Borer	Riparian/Wet, Park/ Open Lawn	Catkins	None
Betula platyphylla Japanese White Birch	'Fargo'- Columnar growth form with high wind tolerance 'Jefpark'- Higher tolerance to urban conditions	Bronze Birch Borer	Street Tree, Park/ Open Lawn	Catkins	None
Betula populifolia Gray Birch	None	Bronze Birch Borer	Riparian/Wet	Catkins	None
Carpinus betulus European Hornbeam	'JFS-KW1CB'- Pyramidal growth form, higher heat tolerance 'Frans Fontaine'-	None Notable	Street Tree, Park/ Open Lawn	Catkins	None

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Name	Notable Cultivars	Health Concerns	Site Usage	Flower/Fruit/ Seed	Other Notes
Carpinus caroliniana American Hornbeam/ Musclewood/ Blue Beech	'Uxbridge'- Higher tolerance to urban conditions 'CCSQU'- Dense growth form 'JN Strain'- Higher tolerance to clay and alkaline soils	None Notable	Street Tree, Riparian/Wet, Park/Open Lawn, Overhead Utility Friendly	Catkins	Attractive bark and availability in single-stem or multiple-stem variants make this tree an adaptable choice.
Carya cardiformis Bitternut Hickory/ Swamp Hickory	None	None Notable	Riparian/Wet, Park/Open Lawn	Nut	Deep taproot.
Carya glabra Pignut Hickory	None	None Notable	Park/Open Lawn	Nut	Deep taproot.
Carya illinoinensis Hardy Pecan	None	Various pests and disease	Park/Open Lawn	Nut	Deep taproot.
Carya laciniosa Shellbark Hickory	None	None Notable	Riparian/Wet, Park/Open Lawn	Nut	Deep taproot.
Carya ovata Shagbark Hickory	None	None Notable	Riparian/Wet, Park/Open Lawn	Nut	Deep taproot.
Carya tomentosa Mockernut Hickory	None	None Notable	Park/Open Lawn	Nut	Deep taproot.
Catalpa bignonioides Southern Catalpa	None	None Notable	Riparian/Wet, Park/Open Lawn	Flowers, Seed Pod	None
Catalpa speciosa Northern Catalpa	‘Hiawatha 2’- Narrow growth form and higher tolerance to urban environments	None Notable	Park/Open Lawn	Flowers, Seed Pod	None

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Name	Notable Cultivars	Health Concerns	Site Usage	Flower/ Fruit/ Seed	Other Notes
Celtis laevigata Sugarberry/ Sugar Hackberry/ Southern Hackberry	None	Anthracnose, Nipple Gall	Street Tree, Riparian/Wet, Park/Open Lawn	Drupe	None
Celtis occidentalis Common Hackberry	'Chicagoland'- Compact growth form 'Magnifica'- Higher tolerance to salt and drought 'Prairie Sentinel'- Narrow form, higher tolerance to urban conditions	Anthracnose, Nipple Gall	Street Tree, Riparian/Wet, Park/Open Lawn	Drupe	Great at water filtration. Underutilized species.
Celtis tenuifolia Dwarf Hackberry	None	Anthracnose, Nipple Gall	Riparian/Wet, Park/Open Lawn, Overhead Utility Friendly	Drupe	Difficult to find commercially.
Cercidiphyllum japonicum Katsura Tree	'Heronswood Globe'- Dwarf variety 'Hanna's Heart'- Narrow growth form 'Kooldak'- Higher cold tolerance	None Notable	Street Tree, Riparian/Wet, Park/Open Lawn	None Notable	Shallow root system. Usually used as a specimen tree for landscaping. Pleasant smell in the spring.
Cercis canadensis Eastern Redbud	‘MN Strain’- Higher cold tolerance ‘Ace of Hearts’- Dwarf variety	Does poorly when exposed to full sun or extreme heat	Riparian/Wet, Park/Open Lawn, Overhead Utility Friendly	Flowers	Great Michigan native tree with striking pink flowers but occasionally splits apart in maturity due to growth form.
Chionanthus retusus Chinese Fringetree	‘Tokyo Tower’- Narrow growth form	Rarely affected by Emerald Ash Borer	Park/Open Lawn, Overhead Utility Friendly	Flowers	Preferable to plant the U.S. native White Fringetree.
Chionanthus virginicus White Fringetree	None	Rarely affected by Emerald Ash Borer	Park/Open Lawn, Overhead Utility Friendly	Flowers	Plantings in Central and Southeast Michigan have no observed Emerald Ash Borer damage.

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Name	Notable Cultivars	Health Concerns	Site Usage	Flower/ Fruit/	Other Notes
Cladrastis kentuckea Yellowwood	‘Perkins Pink’- Higher tolerance of drought and different soil pH	None Notable	Park/Open Lawn	Flowers	Great species for air filtration. Weaker wood and wide spread make it unsuitable for street tree use. Fixes nitrogen in the soil.
Cornus alternifolia Pagoda Dogwood/ Alternate-Leaf Dogwood	'Siberica’- Narrow growth form	Anthracnose, various other pests and disease	Riparian/Wet, Overhead Utility Friendly	Flowers	None
Cornus florida Flowering Dogwood	None	Anthracnose, various other pests and disease	Riparian/Wet, Park/Open Lawn, Overhead Utility Friendly	Flowers	None
Cornus kousa Kousa Dogwood	'Cherokee Princess'- Highly resistant to spot anthracnose 'Pygmy'- Dwarf growth from 'Appalachian Blush'- Higher disease resistance	Anthracnose, various other pests and disease	Park/Open Lawn, Overhead Utility Friendly	Flowers	None
Cornus mas Corneliancherry Dogwood	'Golden Glory'- Higher tolerance for urban conditions 'Redstone'- Higher tolerance for urban conditions	Anthracnose, various other pests and disease	Park/Open Lawn, Overhead Utility Friendly	Flowers, Berry	None
Corylus colurna Turkish Filbert/ Turkish Hazelnut	None	Eastern Filbert Blight	Street Tree, Park/ Open Lawn	Nut, Seed Pod	None
Cotinus obovatus American Smoketree/ Chittamwood	None	None Notable	Riparian/Wet, Park/Open Lawn, Overhead Utility Friendly	Flowers	None

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Name	Notable Cultivars	Health Concerns	Site Usage	Flower/Fruit/ Seed	Other Notes
Crataegus crusgalli Cockspur Hawthorn	'Cruzam Crusader'- Thornless variety	Fireblight, rusts, scab, various pests	Park/Open Lawn, Overhead Utility Friendly	Flowers, Fruit	Has long thorns but thornless cultivars are available.
Crataegus phaenopyrum Washington Hawthorn	'Washington Lustre'- Higher tolerance and adaptability to urban conditions	Fireblight, rusts, scab, various pests	Park/Open Lawn, Overhead Utility Friendly	Flowers, Fruit	Has long thorns but thornless cultivars are available.
Crataegus viridis Green Hawthorn	'Winter King'- Flat top branching form, higher tolerance to urban conditions	Fireblight, rusts, scab, various pests	Park/Open Lawn, Overhead Utility Friendly	Flowers, Fruit	Has long thorns but thornless cultivars are available.
Diospyros virginiana Common Persimmon	None	None Notable	Park/Open Lawn	Flowers, Fruit	Female varieties produce fruit.
Eucommia ulmoides Hardy Rubber Tree	None	None Notable	Park/Open Lawn	None Notable	None
Fagus grandifolia American Beech	None	Beech Bark Disease, Beech Leaf Disease	Park/Open Lawn	Nut, Seed Pod	None
Fagus sylvatica European Beech	None	Beech Bark Disease, Beech Leaf Disease	Park/Open Lawn	Nut, Seed Pod	None
Franklinia alatmaha Franklin Tree	None	None Notable	Riparian/Wet, Park/Open Lawn, Overhead Utility Friendly	Flowers	Difficult to transplant.

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Name	Notable Cultivars	Health Concerns	Site Usage	Flower/ Fruit/	Other Notes
Ginkgo biloba Ginkgo/ Maidenhair Tree	'Princeton Sentry'- Narrow growth form, higher tolerance to urban conditions 'Magyar'- Fruitless, higher tolerance to urban conditions 'The President'- Fruitless, dense branching	None Notable	Street Tree, Park/Open Lawn	Fruit	Male varieties are fruitless but could possibly revert to female form and produce fruit.
Gleditsia triacanthos var. inermis Thornless Honeylocust	'Skyline'- Seedless, higher tolerance to urban conditions 'Imperial'- Compact growth form, seedless, higher tolerance to urban conditions 'Halka'- Seedless, higher tolerance to urban conditions	None Notable	Street Tree, Park/Open Lawn	Seed Pod	Has thorns but thornless cultivars are available. Highly rot resistant wood and holds lower branches that require occasional pruning. Fixes nitrogen in the soil.
Gymnocladus dioicus Kentucky Coffeetree	'Espresso'- Seedless 'True North'- Seedless, higher cold tolerance 'Skinny Latte'- Narrow and smaller growth form	None Notable	Street Tree, Riparian/Wet, Park/Open Lawn	Seed Pod	Exceptionally high tolerance to urban conditions.
Halesia carolina Carolina Silverbell/ Common Silverbell	None	None Notable	Riparian/Wet, Overhead Utility Friendly	Flowers, Seed Pod	None
Hamamelis vernalis Vernal Witch hazel	‘Autumn Embers’- Upright growth form	None Notable	Riparian/Wet, Overhead Utility Friendly	Flowers	Can spread through root suckers.
Hamamelis virginiana Common Witch hazel	None	None Notable	Riparian/Wet, Overhead Utility Friendly	Flowers	Can spread through root suckers.
Hydrangea paniculata Panicle Hydrangea	None	None Notable	Park/Open Lawn, Overhead Utility Friendly	Flowers	Usually used in small 'tree' forms for decorative purposes.

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Name	Notable Cultivars	Health Concerns	Site Usage	Flower/ Fruit/ Seed	Other Notes
Juglans cinerea Butternut/ White Walnut	None	None Notable	Park/Open Lawn	Nut	Roots secrete juglone which inhibits growth of other plants around tree.
Juglans nigra Black Walnut	None	Butternut canker	Park/Open Lawn	Nut	Roots secrete juglone which inhibits growth of other plants around tree.
Laburnum anagyroides Common Laburnum/ Golden Chain Tree	None	None Notable	Park/Open Lawn, Overhead Utility Friendly	Flowers, Seed Pod	Seeds harmful if ingested. Fixes nitrogen in the soil.
Liquidambar styraciflua Sweetgum	'Rotundiloba'- Seedless with interesting leaf shape 'Clydesform'- Compact and narrow growth form 'Slender Silhouette'- Very narrow growth form	None Notable	Street Tree, Park/Open Lawn	Seed Pod	Spiked seed balls add ornamental value but could be a burden to clean up.
Liriodendron tulipifera Tuliptree/ Tulip Poplar/ Yellow Poplar	'Fastigiatum'- Narrow growth form 'JFS-Oz'- Uniform and upright growth form 'Compactum'- Dwarf variety	None Notable	Street Tree, Park/Open Lawn	Flowers	None
Maackia amurensis Amur Maackia	None	None Notable	Street Tree, Park/Open Lawn, Overhead Utility Friendly	Flowers	Fixes nitrogen in the soil.
Maclura pomifera Osage Orange	'Double O'- Thornless, upright growth form 'White Shield'- Thornless, fruitless 'Wichita'- Higher tolerance to urban conditions	None Notable	Park/Open Lawn	Fruit	Thornless and fruitless varieties are available. Fruitless varieties could be used as a street tree. Fruit is sometimes referred to as a ‘spider ball’.

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Name	Notable Cultivars	Health Concerns	Site Usage	Flower/ Fruit/	Other Notes
Magnolia acuminata Cucumbertree Magnolia	None	Magnolia Scale	Park/Open Lawn	Flowers	Highest cold tolerance of the magnolia species.
Magnolia stellata Star Magnolia	None	Magnolia Scale	Park/Open Lawn, Overhead Utility Friendly	Flowers	None
Magnolia virginiana Sweetbay Magnolia	None	Magnolia Scale	Riparian/Wet, Park/Open Lawn	Flowers	None
Magnolia x loebneri Loebner Magnolia	None	Magnolia Scale	Park/Open Lawn, Overhead Utility Friendly	Flowers	None
Magnolia x soulangiana Saucer Magnolia	None	Magnolia Scale	Park/Open Lawn, Overhead Utility Friendly	Flowers	None
Malus sargentii Sargent Crabapple	None	Apple Cedar Rust, Apple Scab, Fireblight	Park/Open Lawn, Overhead Utility Friendly	Flowers, Fruit	Potentially higher rates of disease and pest issues due to climate change.
Malus spp. Crabapple	Various with different pest and disease resistance	Apple Cedar Rust, Apple Scab, Fireblight	Park/Open Lawn, Overhead Utility Friendly	Flowers, Fruit	Potentially higher rates of disease and pest issues due to climate change.
Metasequoia glyptostroboides Dawn Redwood	'Gold Rush'- Higher tolerance to temperature fluctuations 'JFS-PN3Legacy'- Upright and uniform growth	None Notable	Street Tree, Riparian/Wet, Park/Open Lawn	None Notable	Deciduous conifer. Similar to Baldcypress.
Nyssa sylvatica Black Gum/ Black Tupelo	'David Odom'- Better growth form for streetscapes	Leaf Spot	Street Tree, Riparian/Wet, Park/Open Lawn	Drupe	Sometimes difficult to establish. Deep red fall color make this species a good alternative to maple trees.

Michigan Community Tree Species Selection Guide

Name	Notable Cultivars	Health Concerns	Site Usage	Flower/ Fruit/ Seed	Other Notes
Ostrya virginiana American Hop-Hornbeam/ Ironwood	‘JFS-KWS’- Upright growth form	None Notable	Street Tree, Riparian/Wet, Park/Open Lawn	Flowers	Very strong wood. Good for bollard plantings.
Oxydendrum arboreum Sourwood/ Lily-of-the-Valley Tree	None	None Notable	Park/Open Lawn, Overhead Utility Friendly	Flowers	None
Parrotia persica Persian Parrotia/ Persian Ironwood	‘JLColumnar'- Narrow growth form 'Inge's Ruby Vase'- Narrow upright growth form 'Vanessa'- Vase shaped growth form	None Notable	Street Tree, Park/Open Lawn	Flowers	None
Platanus occidentalis Sycamore	None	Anthracnose	Street Tree, Park/Open Lawn	Seed Pod	High emissions of volatile organic compounds and pollen in spring.
Platanus x acerifolia London Planetree	'Bloodgood'- Higher resistance to anthracnose 'Morton Circle'- Higher tolerance to urban conditions, higher anthracnose resistance, denser growth form 'Morton Naper'- Higher resistance to anthracnose	Anthracnose	Street Tree, Park/Open Lawn	Seed Pod	High emissions of volatile organic compounds and pollen in spring.
Populus spp. Aspen/ Poplar/ Cottonwood	None	Various pests and disease	Riparian/Wet, Park/Open Lawn	Catkins	Grouping this genus of species that are rarely planted in managed landscapes but good for parks and erosion control. Weak wood. Spreads clonally through roots. Should be planted far away from any above- or below-ground utilities.

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Name	Notable Cultivars	Health Concerns	Site Usage	Flower/ Fruit/	Other Notes
Prunus americana American Plum	None	Various pests and disease	Overhead Utility Friendly	Flowers, Fruit	None
Prunus nigra Canadian Plum	None	Various pests and disease	Overhead Utility Friendly	Flowers, Fruit	None
Prunus sargentii Sargent Cherry	'Columnaris'- Vase shaped growth form	Various pests and disease	Park/Open Lawn	Flowers, Fruit	None
Prunus serotina Black Cherry	None	Various pests and disease	Park/Open Lawn	Flowers, Fruit	None
Prunus serrulata Japanese Flowering Cherry	'Kwanzan'- Vase shaped growth form	Various pests and disease	Park/Open Lawn, Overhead Utility Friendly	Flowers, Fruit	None
Prunus spp. Ornamental Cherry	Various with different pest/ disease resistances and growth forms	Various pests and disease	Park/Open Lawn, Overhead Utility Friendly	Flowers, Fruit	There are many Prunus species not listed within this guide. This is just a general genus summary of those not included.
Prunus virginiana Chokecherry	None	Various pests and disease	Park/Open Lawn, Overhead Utility Friendly	Flowers, Drupe	None
Ptelea trifoliata Wafer-Ash/ Common Hop Tree	None	None Notable	Park/Open Lawn, Overhead Utility Friendly	Samara	Can have an unpleasant odor.
Quercus alba White Oak	None	Oak Wilt, Two-lined Chestnut Borer	Street Tree, Park/ Open Lawn	Nut	Deep taproot. Resistant to oak wilt.

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Name	Notable Cultivars	Health Concerns	Site Usage	Flower/Fruit/ Seed	Other Notes
Quercus bicolor Swamp White Oak	'American Dream'- Pyramidal growth form 'Bonnie & Mike'- Columnar growth form, higher tolerance to urban conditions	Oak Wilt, Two-lined Chestnut Borer	Street Tree, Riparian/Wet, Park/Open Lawn	Nut	Deep taproot. Resistant to oak wilt.
Quercus coccinea Scarlet Oak	None	Oak Wilt, Two-lined Chestnut Borer	Street Tree, Park/ Open Lawn	Nut	Deep taproot.
Quercus ellipsoidalis Northern Pin Oak	None	Oak Wilt, Two-lined Chestnut Borer	Park/Open Lawn	Nut	Deep taproot.
Quercus imbricaria Shingle Oak	None	Oak Wilt, Two-lined Chestnut Borer	Street Tree, Park/ Open Lawn	Nut	Deep taproot.
Quercus lyrata Overcup Oak	None	Oak Wilt, Two-lined Chestnut Borer	Park/Open Lawn	Nut	Deep taproot. Resistant to oak wilt.
Quercus macrocarpa Bur Oak	'JFS-KW14'- Uniform branching with higher anthracnose and	Oak Wilt, Two-lined Chestnut Borer	Street Tree, Park/ Open Lawn	Nut	Deep taproot. Slightly resistant to oak wilt.
Quercus michauxii Swamp Chestnut Oak	None	Oak Wilt, Two-lined Chestnut Borer	Street Tree, Riparian/Wet, Park/Open Lawn	Nut	Deep taproot. Resistant to oak wilt.
Quercus montana Chestnut Oak	None	Oak Wilt, Two-lined Chestnut Borer	Park/Open Lawn	Nut	Deep taproot.
Quercus muehlenbergii Chinkapin Oak	None	Oak Wilt, Two-lined Chestnut Borer	Park/Open Lawn	Nut	Deep taproot. Resistant to oak wilt.

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Name	Notable Cultivars	Health Concerns	Site Usage	Flower/ Fruit/	Other Notes
Quercus palustris Pin Oak	None	Oak Wilt, Two-lined Chestnut Borer	Street Tree, Park/Open Lawn	Nut	Deep taproot.
Quercus phellos Willow Oak	None	Oak Wilt, Two-lined Chestnut Borer	Street Tree, Park/Open Lawn	Nut	Deep taproot.
Quercus robur English Oak	‘Fastigiata’- Narrow growth form, higher tolerance to urban	Oak Wilt, Two-lined Chestnut Borer	Street Tree, Park/Open Lawn	Nut	Deep taproot.
Quercus rubra Northern Red Oak	None	Oak Wilt, Two-lined Chestnut Borer	Street Tree, Park/Open Lawn	Nut	Deep taproot.
Quercus shumardii Shumard Oak/ Swamp Red Oak	None	Oak Wilt, Two-lined Chestnut Borer	Street Tree, Riparian/Wet, Park/Open Lawn	Nut	Deep taproot.
Quercus velutina Black Oak	None	Oak Wilt, Two-lined Chestnut Borer	Street Tree, Park/Open Lawn	Nut	Deep taproot.
Quercus x. Hybrid Oaks	'Nadler'- Narrow growth form, higher tolerance to urban conditions 'Long'- Narrow growth form, higher tolerance to urban conditions	Oak Wilt, Two-lined Chestnut Borer	Street Tree, Park/Open Lawn	Nut	Deep taproot. Vary in traits and tolerances. Reported failure of hybrids throughout Michigan.
Salix nigra Black Willow	None	Various pests and disease	Riparian/Wet	Catkins	Fast growing tree with short lifespan. Weak wood. Root system pursues water
Sassafras albidum Sassafras	None	None Notable	Riparian/Wet, Park/Open Lawn	None Notable	Leaves and bark have a pleasant scent.

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Name	Notable Cultivars	Health Concerns	Site Usage	Flower/ Fruit/	Other Notes
Stewartia pseudocamellia Korean Stewartia/ Japanese Stewartia	‘Pilar Bella’- Columnar growth form	None Notable	Park/Open Lawn	Flowers	None
Styrax japonicus Japanese Snowbell	None	None Notable	Park/Open Lawn, Overhead Utility Friendly	Flowers	None
Styrax obassia Fragrant Snowbell	None	None Notable	Park/Open Lawn, Overhead Utility Friendly	Flowers	None
Taxodium distichum Baldcypress	'Mickelson'- Narrow growth form, higher tolerance to urban conditions 'Skyward'- Dwarf variety for areas around utility wires	None Notable	Street Tree, Riparian/Wet, Park/ Open Lawn	None Notable	Deciduous conifer. Observed successful plantings in Northern Midwest despite being a southern species.
Taxodium distichum var. imbricarium Pondcypress	'Carolyn Malone'- Higher heat and flooding tolerance	None Notable	Street Tree, Riparian/Wet, Park/ Open Lawn	None Notable	Deciduous conifer. A variety of Baldcypress.
Tilia americana American Linden/ Basswood	'Bailyard'- Dense branching form 'Boulevard'- Narrow growth form, higher tolerance to urban conditions 'McKSentry'- Narrow growth form	Japanese Beetle	Street Tree, Park/ Open Lawn	Flowers	Commonly sprouds from base of the tree but can be pruned back as suckers appear.

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Name	Notable Cultivars	Health Concerns	Site Usage	Flower/ Fruit/	Other Notes
Tilia cordata Littleleaf Linden	'Greenspire'- Higher tolerance to urban conditions 'Glenleven'- Higher tolerance to urban	Japanese Beetle	Street Tree, Park/ Open Lawn	Flowers	Commonly sprouts from base of the tree but can be pruned back as suckers appear.
Tilia tomentosa Silver Linden	'Sashazam'- Higher drought tolerance 'Sterling'- Leaves resist insect feeding damage	Japanese Beetle	Street Tree, Park/ Open Lawn	Flowers	Commonly sprouts from base of the tree but can be pruned back as suckers appear.
Tilia x. Hybrid Lindens	'Redmond'- Higher tolerance to urban conditions	Japanese Beetle	Street Tree, Park/ Open Lawn	Flowers	Commonly sprouts from base of the tree but can be pruned back as
Ulmus americana American Elm	Various cultivars with Dutch Elm Disease resistance	Dutch Elm Disease	Street Tree, Riparian/ Wet, Park/Open Lawn	None Notable	Should only plant varieties that have Dutch Elm Disease resistance.
Ulmus x. Hybrid Elms	'Morton Accolade'- Dutch Elm Disease resistance 'New Horizon'- Dutch Elm Disease resistance, higher tolerance for cold conditions	Dutch Elm Disease	Street Tree, Riparian/ Wet, Park/Open Lawn	None Notable	Should only plant varieties that have Dutch Elm Disease resistance.
Zelkova serrata Japanese Zelkova	'JFS-KW1'- Compact growth form 'Schmidtlow'- Flat top growth form for around utility wires 'Green Vase'- Dense growth form	None Notable	Street Tree, Park/ Open Lawn	None Notable	Branch unions can break apart in areas with frequent freeze/ thaw cycles.

Michigan Community Tree Species Selection Guide

Conifer Species List

Overview

Conifer trees are the species that usually keep their leaves for many years.* Conifers include the genus for spruce, pine, and fir trees that are not as common in managed landscapes. These species are disproportionally affected by climate change and have a multitude of pests and disease. These trees are usually used for privacy, windbreaks, and screening purposes in communities but can be used for park, drainage, and other areas as well. It is usually not advisable to plant around roadways due to line of sight issues for motorists, cyclists, and pedestrians.

Limitations

This list was created by compiling species that are available through Michigan nurseries as well as reference materials about tree species that may or may not be readily available in Michigan. Not all of these species will be sold at your local nursery and you should tailor your plantings to what is available. You can always inquire about special ordering species with your local supplier.

Specimen trees, or unique trees usually planted as a landscape highlight, were considered but mostly limited to observed species around Michigan. Just because a species is not on this list doesn't mean it should or should not be planted; consult with your local tree supplier and experts. We tried to be inclusive and have as many choices as possible. Cultivars and other information are not included due to the extensiveness of the previous list and the more restricted usage of conifers in communities.

Conifers can be afflicted by many different pests and diseases. Talk to your local experts about issues present in your area and plant a variety of different species for resilience.

This list is a snapshot of information using the data and knowledge we currently have. As time progresses we will learn more about tree species and their effectiveness in Michigan communities. New invasive species, pests, and disease are introduced every year. Urban and community forestry professionals should continue their educations and be aware of these threats and changes in this guide.

*Note: The genus *Larix* is an exception that is a deciduous conifer listed in this list. The *Larix* species are not listed in the deciduous list due to use and availability aligning more with the listed conifers.

Michigan Community Tree Species Selection Guide

Conifer Species List

Botanical Name	Common Name(s)	Hardiness Zones	Mature Height (Ft.)	Mature Spread (Ft.)	Planting Area	Native Species (MI)	Native Species (US)
Abies balsamea	Balsam Fir	3-5	80	40	L	Yes	Yes
Abies balsamea var. phanerolipsis	Canaan Fir	4-7	55	25	S	No	Yes
Abies concolor	White Fir	3-7	80	25	L	No	Yes
Abies fraseri	Fraser Fir	4-7	80	30	L	No	Yes
Abies koreana	Korean Fir	5-7	35	12	M	No	No
Abies lasiocarpa var. arizonica	Arizona Corkbark Fir	4-7	50	20	M	No	Yes
Chamaecyparis lawsoniana	Lawson False cypress/Port-Orford Cedar	5-7	60	15	M	No	Yes
Chamaecyparis nootkatensis	Alaskan Cedar	4-8	50	20	L	No	Yes
Chamaecyparis obtusa	Hinoki False cypress	5-8	20	20	S	No	No
Chamaecyparis pisifera	Sawara False cypress	5-8	35	20	L	No	No
Cryptomeria japonica	Japanese Cedar/ Japanese Cryptomeria	5-9	60	25	L	No	No
Ilex opaca	American Holly	5-9	60	25	M	No	Yes
Juniperus scopulorum	Rocky Mountain Juniper	3-7	40	25	M	No	Yes
Juniperus virginiana	Eastern Red Cedar	3-9	50	20	M	Yes	Yes
Larix decidua	European Larch	3-6	75	30	M	No	No
Larix laricina	Tamarack/ American Larch	2-5	80	50	M	Yes	Yes
Larix x eurolepis	Dunkeld Larch	4-7	90	40	L	No	No
Picea abies	Norway Spruce	2-7	100	40	L	No	No
Picea glauca	White Spruce	2-6	60	20	M	Yes	Yes
Picea glauca var. densata	Black Hills Spruce	3-5	40	15	M	No	Yes
Picea mariana	Black Spruce	2-6	40	20	M	Yes	Yes
Picea omorika	Serbian Spruce	4-7	50	20	S	No	No
Picea rubens	Red Spruce	2-5	80	18	L	No	Yes
Pinus aristata	Bristlecone Pine	4-7	25	15	S	No	Yes
Pinus banksiana	Jack Pine	2-6	50	20	M	Yes	Yes

Michigan Community Tree Species Selection Guide

Conifer Species List

Botanical Name	Common Name(s)	Hardiness Zones	Mature Height (Ft.)	Mature Spread (Ft.)	Planting Area	Native Species (MI)	Native Species (US)
Pinus cembra	Swiss Stone Pine	4-7	40	25	M	No	No
Pinus flexilis	Limber Pine	4-7	60	35	M	No	Yes
Pinus koraiensis	Korean Pine	4-7	60	25	L	No	No
Pinus mugo	Mugo Pine/Swiss	2-7	25	30	L	No	No
Pinus parviflora	Japanese White Pine	4-7	50	50	L	No	No
Pinus ponderosa	Ponderosa Pine	3-7	125	30	M	No	Yes
Pinus resinosa	Red Pine	2-5	80	25	M	Yes	Yes
Pinus strobus	Eastern White Pine	3-8	80	40	L	Yes	Yes
Pseudotsuga menziesii	Douglas Fir	4-6	80	20	M	No	Yes
Thuja occidentalis	White Cedar/ American Arborvitae	3-7	60	15	S	Yes	Yes
Thuja plicata	Western Red Cedar	5-7	70	25	S	No	Yes
Tsuga canadensis	Eastern Hemlock	3-7	70	35	M	Yes	Yes

Evergreen conifers provide air filtration benefits all year round since they retain leaves through the winter.

Pictured: Norway Spruce (right) and Alaskan Cypress (below).

Michigan Community Tree Species Selection Guide

Undesirable Species

Overview

This list includes invasive, potentially invasive and undesirable species. Potentially invasive refers to species not yet classified by the Michigan Department of Agriculture and Rural Development (MDARD) as invasive but which display invasive characteristics. The potentially invasive species should be further studied but it is best not to introduce these to the landscape, just to be safe. This list does not cover every species that is potentially invasive in Michigan, but covers common species from other states within and just south of our climatic zones. Southern hardiness zone species that display invasive characteristics are added onto this list as a precaution even if they are not readily available in the Michigan marketplace at this time. Be wary that some of these undesirable species could be hidden behind cultivar or trade names, so check the tag for a botanical name when purchasing. Refer to MDARD for any restrictions of purchasing, sale, or movement of invasive species. Other species that are not invasive or do not have invasive potential are on this list due to undesirable characteristics for community landscapes.

The photo below was taken on a vacant lot in Detroit. Many species that are invasive or have invasive potential have established themselves including (A) Norway Maple, (B) Siberian Elm, (C) Tree-of-Heaven, and (D) White Mulberry. These trees were probably planted elsewhere and spread to the area through birds or other vectors. It is our responsibility to make sure that neither our managed landscapes and natural areas are not overtaken.

Michigan Community Tree Species Selection Guide

Undesirable Species List

Botanical Name	Common Name	Justification
Acer campestre	Hedge Maple	Invasive Potential
Acer ginnala	Amur Maple	Invasive Potential
Acer negundo	Boxelder	Not suitable for urban conditions
Acer platinoides	Norway Maple	Invasive Potential
Acer pseudoplatanus	Sycamore Maple	Invasive Potential
Acer tataricum	Tatarian Maple	Invasive Potential
Ailanthus altissima	Tree-of-Heaven	Invasive
Albezia julibrissen	Mimosa/Silk Tree	Invasive Potential
Alnus glutinosa	Black Alder/European Alder	Invasive Potential
Betula pendula	European Birch/Silver Birch	Invasive Potential
Caragana arborescens	Siberian Peashrub/Siberian Pea-Tree	Invasive Potential
Crataegus laevigata	English Hawthorn	Invasive Potential
Elaeagnus angustifolia	Russian Olive/Silverberry	Invasive Potential
Evodia danielii	Korean Evodia/Bebe Tree	Invasive Potential
Fraxinus spp.	Ash	Mortality from Emerald Ash Borer
Hibiscus syriacus	Rose-of-Sharon/Althea	Invasive Potential
Ilex aquifolium	English Holly	Invasive Potential
Koelreuteria paniculata	Goldenrain Tree	Invasive Potential
Lagerstroemia indica	Crape Myrtle/Crepe Myrtle	Invasive Potential
Morus alba	White Mulberry	Invasive Potential
Paulownia tomentosa	Empress Tree/Royal Paulownia	Invasive Potential
Phellodendron amurense	Amur Cork Tree	Invasive Potential
Picea pungens	Colorado Blue Spruce	Disease issues
Pinus nigra	Austrian Pine/Black Pine	Invasive Potential, Disease issues
Pinus sylvestris	Scotch Pine/Scot's Pine	Invasive Potential, Disease issues
Pistacia chinensis	Chinese pistache	Invasive Potential
Populus alba	White Poplar	Invasive Potential
Prunus avium	Sweet Cherry/Mazzard Cherry	Invasive Potential
Prunus mahaleb	St. Lucie Cherry	Invasive Potential
Pterocarya stenoptera	Wingnut	Invasive Potential
Pyrus calleryana	Callery Pear	Invasive, Disease issues, Weak Wood
Quercus acutissima	Sawtooth Oak	Invasive Potential
Robinia pseudoacacia	Black Locust	Invasive
Salix alba	White Willow	Invasive Potential
Styphnolobium japonicum	Japanese Pagoda Tree/Chinese Scholar Tree	Invasive Potential
Syringa reticulata	Japanese Tree Lilac	Invasive Potential
Ulmus parvifolia	Lacebark Elm/Chinese Elm	Invasive Potential
Ulmus pumila	Siberian Elm	Invasive Potential

Resources

Expert Resources

Michigan Department of Natural Resources Urban and Community Forestry Program: Michigan.gov/UCF

Michigan Department of Agriculture and Rural Development: michigan.gov/mdard/plant-pest/plant-health/invasive-species

International Society of Arboriculture Michigan: Asm-isa.org

Michigan Green Industry Association: Landscape.org

Michigan Nursery and Landscape Association: MNLA.org

Michigan State University Extension: Canr.MSU.edu

Michigan CISMAs: Michigan's Cooperative Invasive Species Management Areas

Tools

i-Tree Benefits: Itreetools.org

Tree Equity Score: Treeequityscore.org

Urban Tree Canopy Data: Treecanopy.us

Google Environmental Insights Explorer: Insights.sustainability.google

Planting and Maintenance

USDA Tree Owner's Manual: fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5368392.pdf

ReLeaf Michigan: Releafmichigan.org

MI Trees Planting Tracker: michigan.gov/dnr/managing-resources/forestry/mi-trees

Vegetation Barrier Toolkit: chicagorti.org/app/uploads/2023/04/22CRTI_Vegetative-Barrier-Toolkit_0425.pdf

Michigan Department of Transportation Vegetation Management: michigan.gov/mdot/business/permits/right-of-way-construction/billboard-vegetation-removal-trimming

DTE Energy Tree Maintenance: dteenergy.com/us/en/residential/service-request/system-improvements/tree-trimming.html

Consumers Energy Tree Maintenance: consumersenergy.com/outages-and-safety/trees-and-power-lines

Toronto Green Standard: www.toronto.ca/city-government/planning-development/official-plan-guidelines/toronto-green-standard/toronto-green-standard-version-3/mid-to-high-rise-residential-all-non-residential-version-3/ecology-for-mid-to-high-rise-residential-all-non-residential/

Services

MISS DIG 811: Missdig811.org

Michigan State University Plant and Pest Diagnostics: www.canr.msu.edu/pestid/

Michigan State University Soil Testing: homesoiltest.msu.edu

Climate Adaptation Information

Detroit Tree Species Vulnerability: https://forestadaptation.org/sites/default/files/2021-03/DetroitMI_TreeSpeciesVulnerability.pdf

Future Cold Hardiness Zones Tool: climatetoolbox.org/tool/Future-Cold-Hardiness-Zones

Climate Change Tree Atlas: fs.usda.gov/nrs/atlas/tree/

Climate Change Response Framework: forestadaptation.org/assess/ecosystem-vulnerability/urban

Vibrant Cities Lab Toolkit: Vibrantcitieslab.com/toolkit/

Glossary

Arborist: Specially trained professional who deals with the art and science of planting, caring for, maintaining, and diagnosing trees and other woody plant life.

Assisted migration: The human-assisted relocation of species beyond their historic range when they are unable to move or adapt fast enough in response to climate change.

Canopy: The layer of leaves and branches from trees that cover the ground from a top-down view. Usually expressed as a percentage of an area.

Catkin: A cluster of tiny flowers that forms a long, skinny, caterpillar-like shape.

Climate adaptation: The ability of a species to survive changes in climate.

Climate change: The long-term change in the average weather patterns that have come to define local, regional, and global climates.

Deciduous: Trees and shrubs that lose their leaves or needles in the fall.

Drupe: A fleshy fruit with thin skin and a central stone containing the seed.

Genus: The principal taxonomic category that ranks below family and above species.

Growth form: The shape or outline of the top of the tree.

Invasive: A species whose introduction causes economic or environmental harm. Tend to spread quickly and aggressively to outcompete native species for food and habitat.

Managed landscape: Environments that are managed by humans and have features of both constructed and natural environments.

Native: A species that developed and evolved in a particular area and was present prior to European settlement.

Nut: A fruit consisting of a hard or tough shell around a kernel.

Prohibited species: Species that local law or ordinances prohibit to be planted. Check with MDARD and your local official departments.

Riparian: Relating to or situated on the banks of a river or wetland adjacent to rivers and streams.

Samara: Thin, papery “wings” attached to a seed, sometimes called helicopters because of how they fall.

Seed pod: The shell or covering that contains a tree’s seeds. Could be considered ornamental or a nuisance.

Species: a group subordinate to a genus and containing individuals agreeing in some common attributes and called by a common name.

Species suitability: The quality of how appropriate a species is for a particular situation or area.

Taproot: The large, central root of a plant that grows vertically downward which smaller lateral roots branch out.

Taxonomy: The system of the classification of organisms into seven levels from domain to species.

Tree board: A usually volunteer-led board that advises its community about tree issues, concerns, and management.

Tree crown: The branches and leaves that form the top of the tree.

Tree inventory: An inventory of an area, usual by municipality, of the location, species and sometimes quality of trees.

References

- Gilman, E. F. (1997). *Trees for urban and suburban landscapes*. Delmar Publishers.
- Dirr, M. (1998). *Manual of woody landscape plants: their identification, ornamental characteristics, culture, propagation and uses*. Stipes Publishing.
- Phillips, L. E. (1993). *Urban Trees*. McGraw-Hill Companies.
- Barnes, B. V., & Wagner, W. H. (2004). *Michigan Trees, Revised and Updated*. University of MICHIGAN REGIONAL.
- *Detroit|Climate Change Response Framework*. (n.d.). Forestadaptation.org. https://forestadaptation.org/assess/ecosystem-vulnerability/urban/detroit
- *Urban Forests|Climate Change Response Framework*. (n.d.). Forestadaptation.org. https://forestadaptation.org/assess/ecosystem-vulnerability/urban
- *Plants|NC State University*. (2019). Ncsu.edu. https://plants.ces.ncsu.edu/
- *Search Trees and Plants*. (n.d.). The Morton Arboretum. https://mortonarb.org/plant-and-protect/search-trees-and-plants/
- *Natural Resources Conservation Service*. (2025, January 14). Natural Resources Conservation Service. www.nrcs.usda.gov/state-offices/michigan
- *Urban Forestry Outreach and Research (UFOR) | The UFOR Nursery & Lab*. (2025). Umn.edu. https://trees.umn.edu/
- *Smart Tree Tip Sheets*. (2025). Gardening in Michigan. www.canr.msu.edu/home_gardening/trees-shrubs/selection
- Missouri Botanical Garden. (2019). *Plant Finder*. Missouribotanicalgarden.org. www.missouribotanicalgarden.org/PlantFinder/PlantFinderSearch.aspx
- *Invasive Plant Atlas of the United States - Database of Plants Invading Natural Areas: Invasive Plant Atlas of the United States*. (n.d.). www.invasiveplantatlas.org.
- *Invasive Plants in West Virginia*. (n.d.). West Virginia Division of Natural Resources. wvdnr.gov/plants-animals/exotic-and-invasive-species/invasive-plants-in-west-virginia/
- *VERMONT TREE SELECTION GUIDE: A list of suitable species for managed landscapes in residential and urban settings*. (n.d.). vtcommunityforestry.org/sites/default/files/2022-11/complete-vt-tree-selection-guide-2022.pdf
- *Ash Replacements for Urban and Woodland Plantings Bulletin 924*. (2005) Ohio State University Extension