

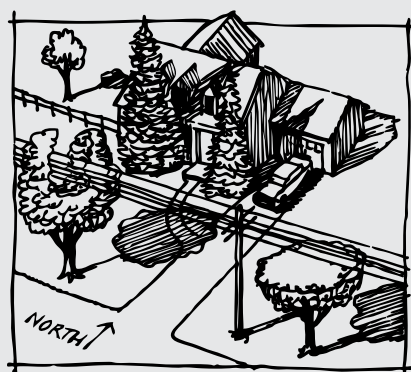


# The Right Tree for the Right Place

TREE CITY USA®  
BULLETIN

No. 4

Editor: Dr. James R. Fazio • \$3.00

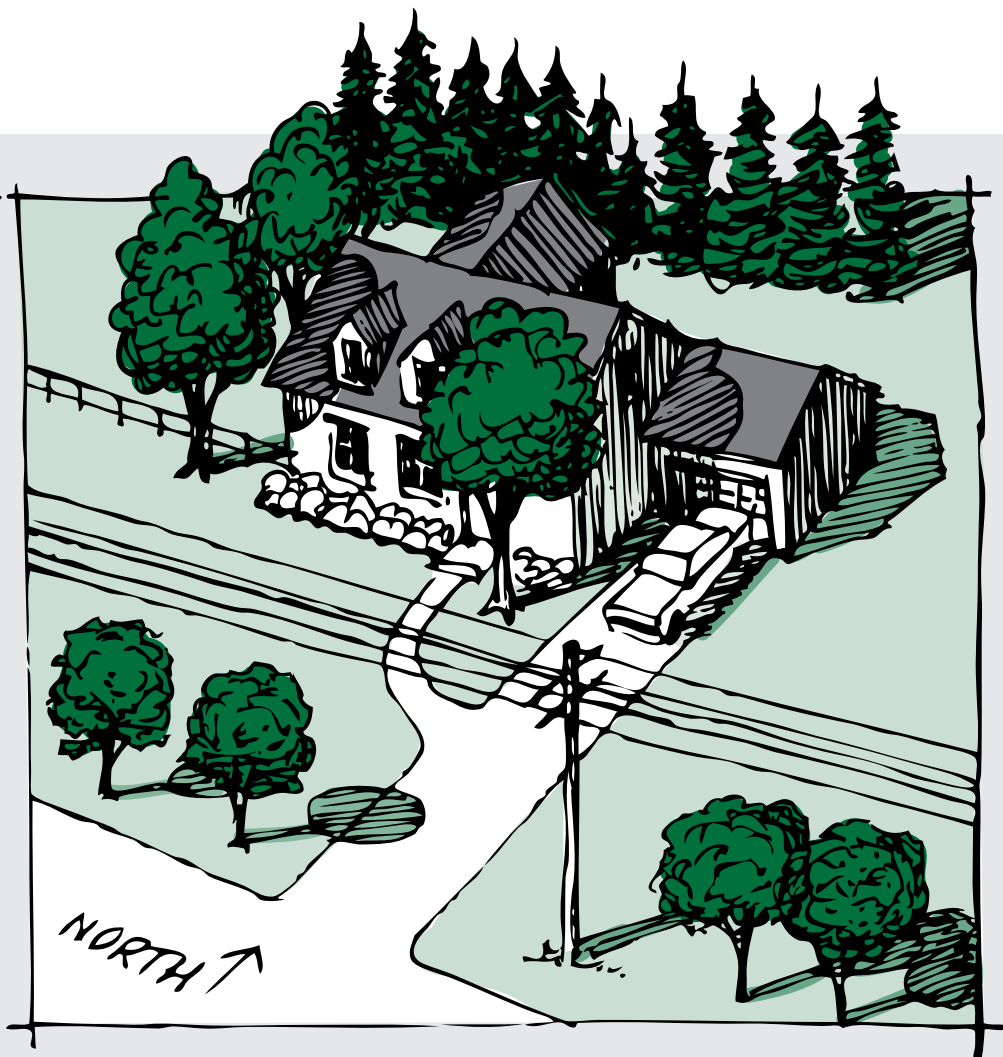


## WRONG (above)

Planting large trees under utility lines often means disfigured trees. Large evergreens close to the house on the south block warming winter sunlight.

## RIGHT (right)

Short flowering trees don't clash with overhead utility lines. Large deciduous trees on the southeast, southwest, and west provide cooling shade in summer and don't obstruct the low winter sun. An evergreen windbreak on the north blocks cold winter winds.



**A**ny Friend of Tree City USA can list the many benefits of trees — shade, beauty, windbreak, privacy, cleaner air, less noise, less glare, and higher property values to name a few. But the key to these benefits is to select the right tree and plant it in the right place. The right tree in the right place not only ensures a lifetime of satisfaction, it also keeps maintenance costs low.

“What is right?” may sound like an exam question from a class in moral philosophy, but in the green world, it is not quite as complex. A tree’s requirements to thrive, its form or shape, its size at maturity, and its role or function in your landscape help determine the best tree to plant. Beyond that, the question enters the grey area of personal taste where what is “right” is largely a matter of opinion.



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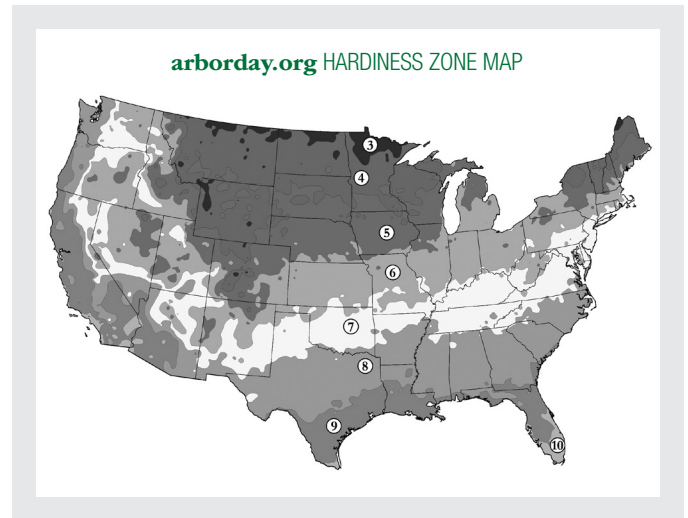
# Environmental Factors to Consider

*In selecting a tree, your first consideration must be what the tree needs. In other words, what environmental factors limit the ability of a particular species to live a healthy life? One indication is to look at the native species in your area. These trees have developed on their own through thousands of years of self-selection to survive where you now live. However, native species alone are usually not the answer. Some non-native species and horticulturally developed cultivars may also do well on your site and offer attributes such as beauty, size, pest resistance, or diversity that natives may not provide.*

## MINIMUM TEMPERATURE

The familiar hardiness map has zoned the country based on average annual minimum temperature. The lowest temperature of the zone limits the range of many trees. Low temperatures, especially if they come suddenly, can freeze and kill the living cells in trees. Select a species suitable to the zone where you live.

**CAUTION:** Elevation and exposure differences (the direction of the slope) within each zone also have an effect. North slopes, windy sites, and higher elevations can make a site equivalent to one or two hardiness zones lower. To find your hardiness zone, visit [arborday.org/zones](http://arborday.org/zones).



## MOISTURE

Each species tolerates wet or dry growing conditions to a different degree. Special attention must be given to your selection if the site periodically is flooded, subjected to very dry conditions, or continually exposed to the drying effect of wind. Watering, of course, can modify a dry site, but even when you irrigate, it is important to know the optimal soil moisture requirement for your species. Tip: Since evergreens give off water (transpiration) from their needles all winter, it is important that they are well-watered in the fall before the ground freezes. Also, do not overwater trees. They will drown or develop root rot if the soil is kept too wet. With heavy, clay-type soils, check soil moisture often and water accordingly during dry summer weather. This may be every seven to 10 days or more often if necessary. Sandy soils need water more frequently than clay soils, but watering every other day is probably too much.



## LIGHT

Shade tolerance is the term foresters use to rate the light requirements of each species. Some species, like white birch and most pines, require full sunlight. They are shade intolerant. Tolerant species, like most maples, hemlocks, and yews, grow well in shade. Others, like white oak, are somewhere in between and are referred to as having intermediate tolerance. Don't make the mistake of planting your tree where it is mismatched with its need for light.



## PESTS

Every locality has its problems with particular insects or diseases. The best way to avoid trouble is to avoid the species that host these pests. In some cases, it is possible to buy cultivars that have been bred for resistance to a disease. For example, where white pine blister rust is a problem, it is best to buy white pine that is certified to be resistant to it. Some species, such as ginkgo, are known for their natural resistance to most pests. Others, such as American elm or ashes, are just the opposite. In most cases, planting a species on a site unlike its natural environment is asking for trouble. For example, birch trees grow naturally in moist environments, including river and lake edges. Planting them in an arid site subjects them to stress and makes them more vulnerable to boring insects.

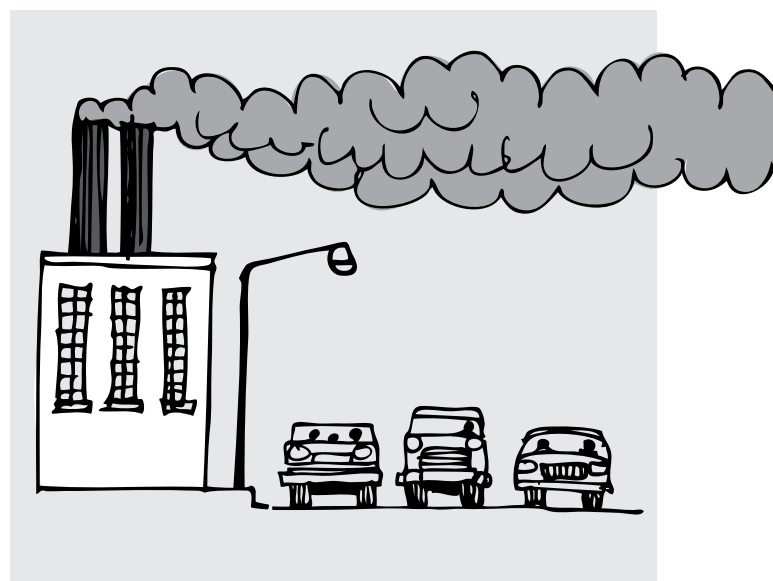
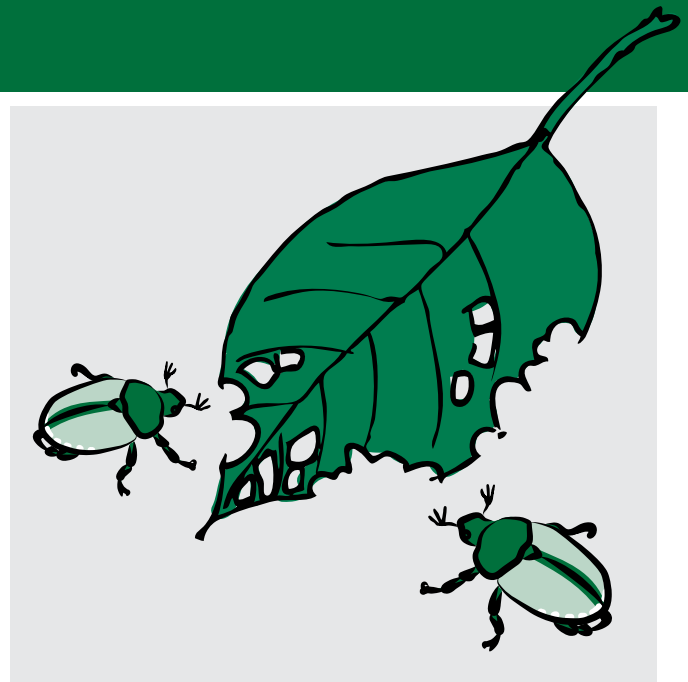
## SOIL

Soil factors are probably the most overlooked when selecting a tree. Soil depth, structure, moisture, and pH can make the difference between success or failure after planting. For example, deep-rooted species will need adequate soil depth for their structural roots, whereas shallow-rooted species may do well on sites where soils thinly cover bedrock or a hard layer of clay. Species that need light or sandy soil should not be planted in rocky or clay-type soils. Also, each tree species has a tolerance range related to acidity and alkalinity, just as it does for shade. This requirement should be matched with the soil where you plan to plant. To learn about the soils in your area, obtain a soil survey map at the county office of the USDA Natural Resources Conservation Service. Unfortunately, soils are often disturbed in urban areas. Trees that would typically do well in native soil may struggle due to poor soil structure from soil being disturbed or mixed during construction or other building activities. Compaction of any soil due to heavy pedestrian or vehicle use often reduces a tree's growth, size potential, and overall health.

## AIR POLLUTION

Unfortunately, the ability of a species to tolerate air pollution is becoming more important. Chemicals in the air vary with localities, and in some cases, the accumulative effects of pollution are just beginning to show up. The best course of action is to ask a local professional if there are problems in your town and, if so, what species are affected. Similarly, salt spray from either the ocean or street de-icing can be a problem locally, and some species are more sensitive to it than others. Where these are problems, ask a certified arborist, nursery professional, urban forester, or extension agent about which trees to avoid.

**TIP:** Local nurseries generally do not carry trees that are incompatible with the local climate. However, for site factors other than climate, it is pretty much a matter of "buyer beware." Get the answers before you buy, and look around your neighborhood to see what may be growing well.



# Tree Factors to Consider

## 1 THE TREE'S PURPOSE

*A tree's function is the purpose you want it to serve for you. Some of the most common are listed here to help ensure you get the right tree for the right place.*

### SHADE

This is why many people plant trees. Trees provide a greater cooling effect than man-made structures because not only are the rays of the sun blocked, water is also added to the air through transpiration.

Observation is the best way to determine where to plant to maximize shade. In the drawing, notice the difference between July and early autumn. Plant for where you want the shadow during the hottest time of the year — and the time of day you desire the shade.

High, wide-crowned trees with deciduous leaves are the best providers of shade.

### AESTHETICS

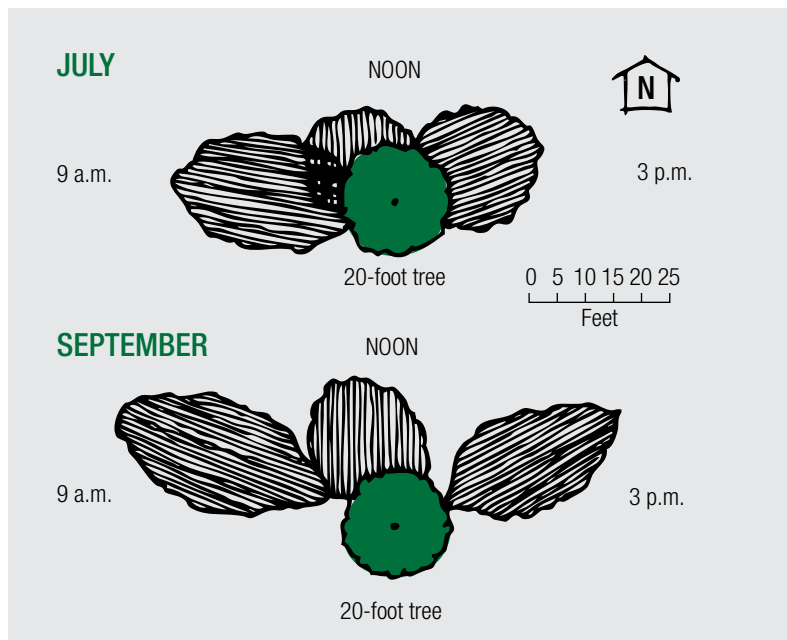
To create an accent, select a tree that will contrast with the predominant landscape character. For example, to give the lot an appearance of greater depth, plant on a diagonal line outward from the front corners of the house. This is called framing. Trees planted behind the house and to the side will provide background. Trees can also add visual appeal to a patio, pool, or play area. They can also be used to separate spaces and provide space enclosure.

**ACCENTS:** A tree with color or some other showy feature can be used as an accent point in your landscaping picture. Don't overdo accents. One accent plant in a given setting or view area is usually enough.

For a visual accent, select a tree that contrasts with the characteristic landscape in one or more of the design elements — form, size, color, or texture. The more contrasts, the stronger the accent will be.

If you wish to have a strong point of emphasis, select a specimen tree with two, three, or even all four of these characteristics:

- ✓ **FORM OR SHAPE:** A tree's form should contrast with the predominate landscape character in a setting. For example, horizontal lines may dominate in a rural midwestern landscape. Accent forms will be those that contrast with that character, such as pyramidal, columnar, or upright oval tree shapes. Weeping forms will also accent since they are uncommon to this characteristic landscape.
- ✓ **SIZE:** A tree that stands out because of its large size will tend to accent.



- ✓ **COLOR:** Planting trees for their spring flower color, fall foliage color, or interesting winter bark is quite popular. While such color is often temporary, it is an important consideration. Summer foliage color, while not as intense, can lend an accent element of longer duration.
- ✓ **TEXTURE:** Foliage texture can be classified as fine, medium, or coarse. If a tree's texture is used as an accent element, it should be an abrupt change from textures that predominate in the characteristic landscape. Bark texture or picturesque branching structure can also complement an accent plant.

### WINDBREAKS AND SCREENS

Low-branching conifers that hold their foliage are most effective for screening unsightly areas and providing privacy. Noise is best reduced by tall, densely planted trees with fleshy, broad leaves. If combined with conifers, some noise reduction can be extended throughout the year. Dust can also be filtered by such a combination. Windbreaks can be made most effective through a dense, step-like arrangement of both conifers and deciduous trees. However, for protection on south and east sides of a house, deciduous species work best because they allow incoming solar radiation in winter.

### BOUNDARIES

Trees can help to visually delineate your property. Small, narrow-crowned species will do the job while not invading your neighbor's space. Plant far enough on your property to avoid the trunk touching the actual property line when mature.



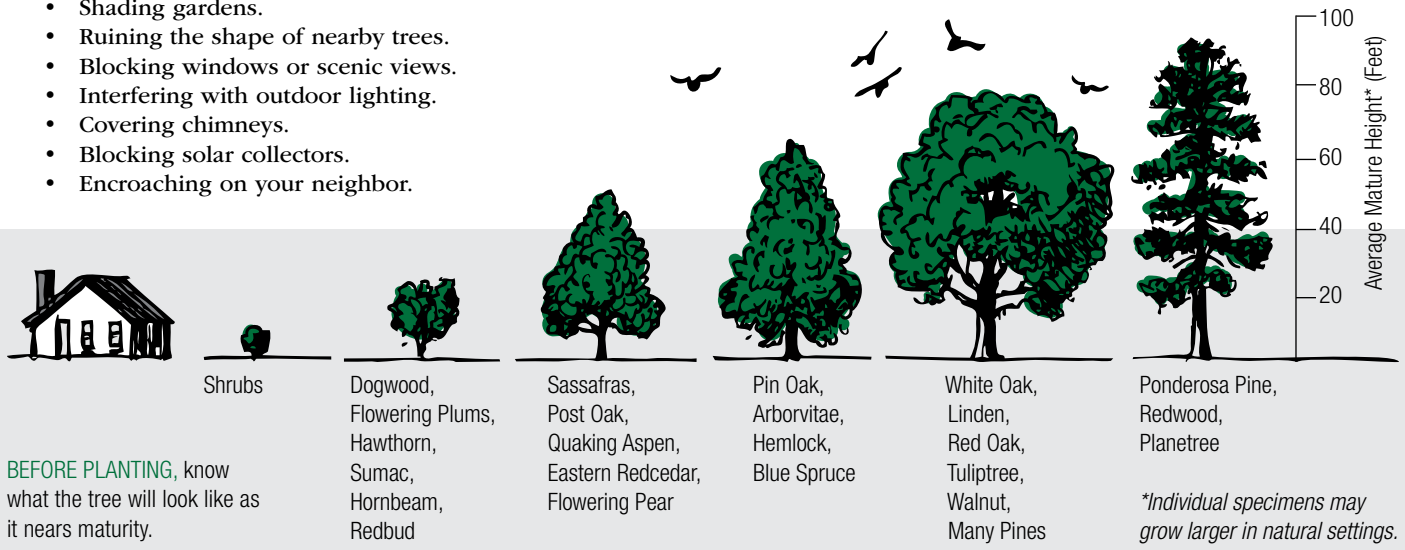
## 2 SIZE AND LOCATION

Available space is probably the consideration most often overlooked or misunderstood when deciding what tree to plant. Even for professionals, it is often difficult to envision the planting site five, 10, or 20 years in the future. Yet this is essential. Before planting, know what the tree will look like as it nears maturity. Consider its height, crown spread, and root space.

Some of the problems below can be dealt with by subsequent pruning. However, it is far easier, less expensive, and better for tree health to select and plant your tree to meet a desired objective while at the same time preventing it from:

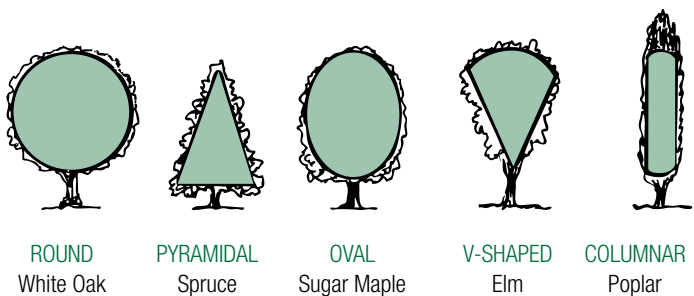
- Lifting walks.
- Entering or moving drainage pipes or other utilities.
- Tangling with wires or eaves.
- Shading gardens.
- Ruining the shape of nearby trees.
- Blocking windows or scenic views.
- Interfering with outdoor lighting.
- Covering chimneys.
- Blocking solar collectors.
- Encroaching on your neighbor.

Spacing Guide	Small tree (<30')	Medium tree (30'-70')	Large tree (>70')
Spacing plant massings	6'-15'	30'-40'	40'-50'
Minimum spacing from wall (one-story building)	8'-10'	15'	20'
Minimum spacing from corner (one-story building)	6'-8'	12'	15'



(These examples are typical mature heights in city conditions. Check booklets published by local forestry professionals or books such as *Manual of Woody Landscape Plants* for the expected mature height and crown spread of trees you are considering.)

## 3 CROWN FORM OR SHAPE



The character of tree crowns and thus the form or shape of trees varies among species as much as leaf shapes or bark patterns. Shape is another clue to how well a tree will fit the space you have available, what problems might occur, and how well it will help meet the goals you have for your property.



Columnar cultivars help adapt street trees to fit narrow spaces or avoid signs.