Proper Tree Selection Steps

1. Match the Tree to Site Conditions

Correctly matching the tree to the site conditions is the single most important step in proper tree selection. Like all living things, every tree has a limited range of physical conditions in which it will thrive. These required conditions can vary widely according to the tree species. Do not waste a lot of time and money by trying to make a tree grow in a site that is not suited to its needs. Consider the following factors when evaluating site conditions:

Soils

The soil in which a tree is planted must have properties that will support the healthy development of the tree throughout its life. Simply filling the planting hole with amended soil is not enough. You must consider all of the soil in the entire area that will eventually be occupied by the tree's root system. Because it is not practical to replace such a large quantity of soil or to continually amend and supplement deficient soils throughout the life of the tree, select trees that are naturally adapted to thrive in the area's native soils. At a minimum, consider the following soil characteristics.

Evaluate soil properties

- **Fertility and Acidity** – Test the soil to see what nutrients it contains and its pH, and make sure these are consistent with the tree's needs. For example, most fir trees (*Abies sp.*) thrive in very acidic soils but cannot tolerate highly alkaline soils. Basic soil test kits are available at most nurseries. Soil samples can also be provided to local analytical labs for more detailed information.
- **Soil Type** – Soils are composed of varying amounts of clay, sand, and loam. The quantity of each element affects how well the soil holds moisture, how often irrigation is needed, the availability of nutrients, and the many chemical reactions that take place in the root zone.
- **Depth** – Some tree species are very deeply rooted and must have several feet of good soil, but others have more shallow root systems that can develop nicely in more shallow soil. Use a shovel to make sure there is adequate soil in the intended planting location.
- **Drainage** – The amount of clay in the soil and how often the site is inundated can both affect how quickly soil dries out . Willows thrive in soils along streams that are frequently flooded, but most cedars would soon die in such conditions.

Consider extremes of winter cold and summer heat when selecting a tree

Climate

Most tree species are naturally adapted to live within a limited climate range. Consider the overall climate conditions of the locale as well as the microclimate characteristics unique to the specific place where the tree will be planted. Remember to think about the entire annual cycle of climate changes.

- **Temperature Extremes** – What are the maximum hot and cold temperatures expected in the location where the tree will be planted? North facing slopes tend to be cooler than south facing slopes in the same area, and shade from structures can also reduce temperatures.
- **Wind Exposure** – Some trees cannot tolerate the drying effects or the structural stresses associated with persistent or gusty winds.
- **Sun and Shade** – Most trees need at least 6 hours of sun in the middle of the day, but some tolerate or require part shade. Trees suited for shady areas are able to photosynthesize with less light than those that need full sun.
- **Reflected Heat** – On a hot sunny day, paved areas such as sidewalks and asphalt can radiate temperatures that are many degrees hotter than the air temperature. This intense heat can scald the bark and leaves of some tree species.

Douglas Fir and Oregon Grape

Available Space

Sidewalk upheaval

Trees are genetically programmed to reach a certain size at maturity. If adequate space is not provided to accommodate this growth, the property owner will have to continually prune the tree to control its size. Such pruning is not only impractical, but it may also damage the tree and make it more susceptible to disease and early death.

- **Structures** – Consider both the above- and below-ground parts of the tree and nearby structures to avoid eventual conflicts between branches and walls, roots and foundations. Consider any possible future structural modifications; leave room for such additions and for construction equipment to maneuver without damaging the tree's roots.
- **Clearance from Other Trees** – Unless all of the surrounding trees are mature, they too will need space to reach their full height and width.
- **Overhead or Underground Utilities** – Certain types of tree roots can cause problems for underground pipes and septic systems. Do not plant trees under overhead telephone and power lines if the trees will grow taller than the height of the lines.

Environmental Factors

Be aware of other site conditions that might affect tree growth and pick tree species that are compatible with those conditions.

- **Pests and Disease** – Talk to a tree expert or nursery employee to learn about pests or diseases common in your area and which trees are susceptible to these threats.
- **Human Activities** – Consider any human activities that might cause problems for tree health, such as air pollution from traffic or factories. Make sure the tree you select has similar water needs as the other ornamental plants already in the area or planned to be in the same area.
- **Concerns about Wildfire** – In a region with a risk of wildland fires, ensure that any new trees are planted in accordance with local regulations about distance from buildings and existing woodlands.
- **Native vs. Non-native Plants** – In an area predominated by native species, avoid introducing non-native trees that could become invasive and undermine the existing ecosystem balance.
- **Neighboring Trees** – Other trees in the area will compete with new trees for water, sunlight, and nutrients if they are planted too closely together. Leave enough room between the new and existing trees to allow adequate space for their eventual size.

2. Determine the Maintenance Threshold

Different types of trees require varying degrees of care to remain healthy, safe, and attractive. Before selecting a tree, consider how much maintenance will be required and who will maintain the tree. If a tree requires specialized care or if the homeowner is unable or unwilling to provide the level of maintenance needed, caring for the tree will require hiring a tree care service, gardener, or arborist.

Tree owners must be realistic about how much time and energy they can commit to tree care. Otherwise, the tree may become unhealthy and/or create a hazard. Maintenance can include:

- Leaf pickup and disposal
- Pest and disease management
- Pruning
- Fruit removal or cleanup
- Fertilization while the tree is young

3. Identify Expectations for the Tree

Depending on mature size, shape, growth rate, and other physical characteristics, different types of trees can be used for many purposes. Consider the role the tree is expected to play in the overall landscape throughout the year and in the future. Look through garden design magazines, books, and web sites to get ideas for your property. Pay attention to the trees you see in your neighborhood or community to get a sense for what they look like throughout the year. You can also get design assistance from a landscape architect or some garden centers. Some of the common uses of trees include:

- Shade
- Wind screens
- Fruit
- Seasonal color (leaves, flowers, bark)
- Focal points
- Habitat
- Visual privacy

These deciduous trees will provide summer shade over this home

Arborists are tree care professionals who can help with the proper selection, planting, and care of trees. We recommend choosing Arborists Certified by ISA (International Society of Arborists).

Master Gardeners are lay people who are trained to recognize many tree related issues and make general recommendations. The Master Gardeners are available through the University of California Cooperative Extension. More information about the Master Gardener Program in Placer County can be found at ceplacer.ucdavis.edu/Master_Gardener803/

Nursery Employees often have training in growing conditions and species selection for trees.

Some **Lawn Care Professionals** or **Gardeners** may also have training and experience in tree selection and care.

Where Can You Get Help to Select the Right Tree?

Useful Web Sites:

www.ISA-arbor.org and www.treesaregood.com
These sites are maintained by ISA and provide information about trees, tree care, and contact information for local certified arborists.

www.arborday.org/trees/righttreeandplace
The web site of the National Arbor Day Foundation provides information about tree selection and tree care.

www.ufei.calpoly.edu and selectree.calpoly.edu/
The web site of the Urban Forest Ecosystems Institute at Cal Poly San Luis Obispo has tools, such as SelecTree, to help homeowners with tree selections and identification and diagnosis of diseases and pests that attack California native tree species.

www.placertree.org
Placer Tree Partners is a citizen based organization focused on increasing public awareness and appreciation of trees in an urban forest setting.

Garden Design Books and Magazines
Many books and magazine offer useful design tips and information about proper tree selection.

Choosing the Right Tree

Most trees will outlive the people who plant them, and trees can require a steady investment of time and expense over their lifespan. Therefore, the decision about what type of tree to plant is an important one.

When choosing a tree, several essential steps will help you select the proper tree. Considering **Site Conditions**, the appropriate **Maintenance Threshold** for the tree, and your overall **Expectations** for the tree will help you make the right choice.

Taking these steps will help focus your search to a list of candidate trees that will grow successfully in your site and meet your needs. You can further refine your search by looking at other characteristics such as the availability of tree species, cost, disease resistance, and overall aesthetic quality. Proper tree selection will result in healthy trees and happy tree owners!

Other publications in this series include:

Mature Tree Care
Young Trees – Planting and Care
Protecting Trees During Construction
Native Oaks and Other Native Trees